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New Type Face

This issue of the NATIONAL POULTRY DIGEST comes to you dressed in a new type face. It is known as Electra, a type face which is being used rather extensively in books at the present time because of its unusual legibility. The trend in most publications is toward greater legibility.

Most of the feature articles are set in the 10 point size, while the comments accompanying the statistical tables are set in the 8 point size. Strangely, the 10 point type has practically as many characters to the line as the old 8 point type used throughout the past year, but being a taller type face, there are fewer lines to the page.

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NATIONAL
POULTRY DIGEST

Published monthly at Hanover, Pa., by Everybodys Poultry Magazine Pub. Co., Inc. C. N. Myers, pres.; Jas. T. Huston, vice-pres.; R. B. Alleman, sec.-treas.; Roland C. Hartman, editor; Thomas E. Moncrief, associate editor. Single copies, 25 cents. Back copies, 40 cents. Subscriptions: $2.00 a year in the United States and the Pan-American postal union; $3.00 a year in Canada and foreign countries. Binder holding 12 copies, $1.00 postpaid in U. S. A. Entered as second-class matter Jan. 20, 1939, at the post office at Hanover, Pa., under the act of March 3, 1879.

Vol. 2, No. 13 January, 1940

Informing Consumers About Eggs

By Homer I. Huntington
Executive Manager, New England
Fresh Egg Institute, Worcester, Mass.

Condensed from a Talk

IT is truly a miracle when one considers that around five million eggs a day, the production of millions of hens, must be received in New York City each day and disperse themselves fresh, frozen, or cooked, to the hundreds of thousands of places where all these people sit down to eat.

An industry which has worked out the mechanics of this gigantic job is capable of working out the mechanics of an educational campaign which will help millions of consumers to recognize quickly the importance of our commodity when they are faced with a maze of other foods attractively packaged, labeled, and displayed, together with their informational signs, placards, descriptions, and intriguing pictures.

Herein lies an opportunity for the poultry industry to present to the consumers the merits of our products in an honest, simple, yet convincing way. We must wake up to the fact that the consumer is in the 'driver's seat' and we must be led more or less by her demands. Fortunately for our industry, those demands are largely for more information about the food value and grade terminology.

Consumers of course, come singly

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 5, 1939

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as well as in families and in groups, and while one consumer isn't really important, en masse they can make or break a business. Failure of producer groups to take consumer interest into account may lead them into difficulties, and in the long run injure their business as well as their consumer relations.

What are egg producers going to do? How are they going to tell consumers what they want to know?

What Meat Packers Have Done

Take the meat packers for an example. When they bring out a new product they have at hand, all ready to use, three ways of telling the consumer about it – either through advertising, through sales promotion or through publicity. Their advertising program includes point-of-sales advertising, spot radio announcements and net-work programs; advertising in the newspapers, in the women's magazines, trade publications, bulletins, direct mail, menu helps, and so on.

Their sales promotion includes such helps as window displays, timely recipes and cooking hints, tie-ups with other products, lecture demonstrations, motion pictures and other planned promotion campaigns, such as making use of syndicated feature stories, short and entertaining sent to selected newspapers, with or without pictures or mats.

Well–what the meat packers and others can do, so can the egg producers. Not as individuals, however, because the average individual egg producer has no such means at his disposal. We can not expect him to put on an extensive campaign. He does not have an organization of salesmen, home service people, demonstrators and all the other helps needed for such a campaign, yet the egg producer, whether he sells directly to the consumer, the commission man, or the co-operatives, is finding that the lack of consumer information and service is affecting his profits.

What is needed at this point are producer-distributor organizations, supported by producers and allied industries, to sponsor intensive campaigns to increase the demand for eggs in every home, just as other food commodity groups are doing for their products. The New England Fresh Egg Institute offers an excellent example of what can be done on a regional basis.

Suggest New Egg Uses

Cook books play an important part in the promotion of eggs, for the average person thinks only of boiled, scrambled or fried eggs with perhaps an occasional omelet. The cook books should feature the convenience and ease of egg preparation; their usefulness in planning menus; and their versatility as a food that can be used for breakfast, luncheon, dinner, later supper, or for unexpected guests.

Timely recipes may be printed on egg boxes, or on cards or inserts to be placed inside, or to be given away with other foods. Folders with menu suggestions may be kept on the counter to be picked up by the consumer and remind her of eggs.

Eggs are especially adaptable for summer meals and cooler kitchens and more leisure time for the homemaker should be stressed. After all, what is more delicious for a summer meal than a good egg salad? Prepared in the morning, it is ready to serve whenever you want it.

Stress Health Angle

Advertise the value of eggs for the human body. Eggs have few substitutes in the diet either for children or grown-ups, for eggs are one of the most valuable natural foods, taking a place of honor by the side of milk.

From canned milk to candy bars, no one would think of ignoring the magic of vitamins in promoting food products, although the foods may have lacked them in their natural state. Eggs do not need this reinforcement, for Nature provides in them many of the important vitamins, proteins, and minerals so necessary to our well-being. Consumers want and need this information; the industry needs an organization to disseminate this information.

If you were not brought up as a child to eat eggs, as an adult you are not apt to do so. You do not argue over the food value of eggs, you just don't eat them. Eggs must be made as attractive to children as Popeye has made spinach, and they will soon be asking for eggs.

Care of Eggs by Housewife

Although the egg has been called a "sanitary package sealed by Nature," the fact is recognized that eggs are susceptible to heat and odors and must be kept in the refrigerator until sold. Not all consumers know this fact, and they must be told. They must know they should refuse to buy from a grocer who is careless in handling his eggs. There are, of course, thousands of poultrymen who pride themselves on producing eggs of high quality and there are thousands of retailers who take an equal pride in keeping them fresh, through proper refrigeration, but the consumer should know that she, too, must keep up the good work by placing them at once in her own refrigerator.

The consumer should be told the true facts about all eggs – not only fresh eggs. She should know that fresh eggs are available all the year round. She should know the difference in egg quality and egg size. She should know why eggs of the same grade vary in price according to season. When the consumer goes to the store and asks for "best" eggs, the grocer will give her the best–the best he has in his store, but his best may be a far cry from fresh eggs. She takes them home, and her experience may set her against buying eggs except for cooking. This reacts to the disadvantage of the producer, distributor, manufacturer, as well as to the consumer.

A consumer educated to ask for fresh eggs when she really wants fresh eggs will take no others. If the grocer has no fresh eggs, he loses a sale. A few such episodes will make him fresh-egg conscious; he will push fresh eggs, and if he has sales helps such as booklets or recipes in some form to tell the consumer how to use them, he can push them to better advantage. But some producer organization must furnish him with this literature.

Influence of Fresh Egg Laws

Fresh egg laws have been enacted and are being enforced in many of our states. These laws are intended to protect producers, distributors and consumers. Too often however, consumers are not informed as to the existance of these regulations and, therefore, cannot enjoy maximum benefits from them. Eggs which are sold on a quality and graded basis should not be classed as luxury products.

Consumers are entitled to know that "large fresh" means just that, and that other grades carry equal significance as to size and quality. Consumers must be told the things they need to know about eggs if they are to choose wisely from the great number of products which bid for a share of their purchasing power. Consumers should not be afraid to buy eggs — but should be able to make their egg purchases with the same confidence they have when buying a No. 2 can of a certain vegetable or fruit.

Must Build Confidence

In establishing this confidence in our products, both producers and distributors have a large stake. This whole business of establishing confidence in egg quality can be brought about in a comparatively short time by a united effort on the part of our industry to simplify egg grading terminology. Egg grades should be determined by consumer representatives as well as by regulatory experts, producers, and distributors. Consumers would undoubtedly prefer grades such as A, B, and C.

To create a consumer demand for 'an egg a day' we must supply the information which the consumer needs. But this important information must also be common knowledge of every producer, every distributor, and every manufacturer engaged in the industry.

1939 Poultry News in Review

JANUARY

Jan. 1—Reciprocal trade agreement with Canada becomes effective. Duty on shell eggs between both countries reduced from 10 cents to 5 cents a dozen; dressed ducks and geese, from 10 cents to 6 cents a pound, the same rate as for dressed chickens.

Jan. 1—J. Holmes Martin becomes head of the Federal government's regional poultry research laboratory under construction at East Lansing, Mich.

Jan. 6—Penn State wins the 21st Intercollegiate Poultry Judging Contest at New York City, North Carolina placing second.

Jan. 26 — Series of strikes of poultry marketing unions in New York City settled. Strikes began Jan. 9 with walkout of the Schochtim union, composed of the slaughterers of Kosher poultry, over wages and was followed by sympathy strikes among pluckers, freight unloaders, handlers, drivers and even bookkeepers.

FEBRUARY

Feb. 1—Group of about 20 producers and 100 market men, meeting in Cleveland, go on record as "not opposed to government buying of eggs for relief purposes, provided that such buying be only in such quantity as can be promptly distributed for consumption, and then only by a well supervised method which will eliminate waste."

MARCH

Mar. 9—Indiana Fresh Egg Act, creating a state egg board to regulate wholesale and retail sale of eggs, is approved by Governor M. Clifford Townsend.

Mar. 27—New York City Egg Auction, operated by the Acme Egg Co., an affiliate of Pacific Egg Producers Cooperative, holds first sale.

APRIL

Apr. 15—New express rates on shipping chicks become effective. Cost of shipping chicks long distances is increased, while rate on nearby shipments is reduced.

Apr. 29 — Representatives of producing and marketing interests, meeting in Cleveland, oppose entrance of the government in egg market at present, urging that prices be allowed to find their own level.

MAY

May 4—Secretary of Agriculture Henry A. Wallace designates eggs as one of the surplus food commodities under stamp plan to be tried experimentally in several cities very shortly.

May 23—The Federal Surplus Commodities Corporation purchases 50 cases of fresh gathered firsts at New York—its first purchases of surplus eggs for relief distribution in 1939.

JUNE

June 6-9 — National Poultry Improvement Plan conference held at Cleveland, with 126 in attendance, including an official delegate from each of the 44 cooperating states. The 60-day trial trapnest period for birds under U.S. R.O.P. supervision is abolished.

June 30—Purchases of eggs by the Federal Surplus Commodities Corporation for relief distribution during fiscal year ending today total 3,210,000 dozen.

JULY

July 1 — New container law for New York State, applying to egg cases as well as other packages, becomes effective. This law provides that when farm products of like kind to the original contents are put in used containers by others than original packers, markings dealing with original contents must be removed or obliterated, or the container marked or labeled with the words "Not Original Contents."

July 1—New Jersey law affecting tested-out incubator eggs becomes effective. Requires that infertile eggs tested out of incubators must be broken and denatured with kerosene, creolin or some other substance approved by the N. J. Department of Health before removing from premises. Penalty of $50 for first violation; $100 for succeeding offenses.

July 21—U. S. Department of Agriculture releases "Poultry, a Billion-Dollar Industry," first movie covering all phases of the poultry industry.

July 25—Gov. Culbert L. Olson of California signs bill appropriating $30,000 for the construction of an egg laying contest to be opened in the fall of 1940.

July 26—Dedication of Maryland's new poultry building under construction occurs at College Park, Md. Foreign delegates enroute to Cleveland for the Poultry Congress were among those witnessing the ceremony.

July 28—Secretary of Agriculture Henry A. Wallace officially opens the Seventh World's Poultry Congress in Cleveland, Ohio, reveals that poultry and eggs produce about 12 per cent of the national farm income compared to 5 per cent 50 years ago.

July 30 — Paul McNutt, Federal Social Security Administrator, speaks at dedication of the Cleveland Cultural Gardens on International Peace Day of the Seventh World's Poultry Congress.

July 31—James E. Rice, professor emeritus of Cornell University and general chairman of the Seventh World's Poultry Congress, is elected president of the World's Poultry Science Association. Because of the unsettled international conditions, no decision made on location of next Congress.

July 31—Dr. H. J. Almquist, University of California, receives the Borden Award—a gold medal and a $1,000 check — for scientific accomplishment. The award was based on his results in the field of egg quality, development of a number of measures of egg quality and determining several causes of poor quality; his discovery independently, but concurrently with a Danish scientist, of vitamin K, the anti-hemorrhagic vitamin; and development of the protein quality index which determines by chemical means the biological value of protein in concentrates.

AUGUST

Aug. 1 — Tom Barron, British poultryman, addresses audience of between 4,000 and 5,000 at the World's Poultry Congress.

Aug. 2—International Baby Chick Association decides to continue its fair trade practice committee work from the Kansas City office.

Aug. 2—American Record of Performance Council, composed of laying test managers, meeting in Cleveland, changes name to Council of American Official Egg Laying Tests, and decides to exclude crossbred entries from standard laying tests.

Aug. 2 — National Turkey Federation formed at Cleveland.

Aug. 4—Mrs. Homer Hixson, Gainesville, Fla., wife of a college instructor, receives $1,000 in cash as first prize in the Egg Meal Menu Contest conducted by the World's Poultry Congress.

Aug. 5—Poultry industry mass meeting in Cleveland Public Auditorium empowers executive board of the Seventh World's Poultry Congress to act as planning committee on a long-time egg and poultry consumption program, to expand its committee as deemed necessary and to make its recommendations to the poultry industry early in 1940.

Aug. 7—Seventh World's Poultry Congress closes, largest poultry event ever held in the world. Total attendance is estimated by management at 851,300, the top day being July 31 with an attendance of 117,000, exceeding that of the New York World's Fair for that day. Altogether, 54 nations participated in some way at the Congress; 42 countries sent 108 official delegates.

Aug. 7—Sir Edward Brown, first president of the World's Poultry Science Association and one of the originators of the Congress idea, dies in England at the age of 87. He was knighted in 1930 in recognition of services to the British poultry industry.

Aug. 8 — Regional Poultry Research Laboratory, East Lansing, Mich., dedicated.

Aug. 15—Chas. A. Cyphers, pioneer inventor of incubator equipment, dies. In 1895, he built a 20,000-egg mammoth incubator on the Truslow Poultry Farm, Stroudsburg, Pa. It was believed to be the first room-type incubator, forerunner of the modern cabinet incubator.

Aug. 21—Hatchings of chicks during the first seven months of 1939 were 21 per cent heavier than in the corresponding period of 1938, and 47 per cent heavier than the 1933-37 average for those months, apparently setting a new all-time high record, according to a release from the U. S. Department of Agriculture.

Aug. 23 — A proposed revision of the U. S. Standards of Quality for eggs in the shell is released by the U. S. Department of Agriculture. The wholesale grades are reduced from 22 to 11, and weight specifications are increased slightly for large, medium and small eggs in the retail grades.

SEPTEMBER

Sept. 5—Declaration of war by Great Britain and France against Germany over week-end causes heavy buying in the American grain markets, prices rising the daily maximum permitted by the government.

Sept. 20—U. S. Department of Agriculture reports a 1939 turkey crop of 31,957,000 birds, an increase of 22 per cent over 1938, and 15 per cent over the previous high record production of 1936.

Sept. 29 — Pen of White Leghorns, owned by Irving Kauder, New Paltz, N.Y., establishes new all-time pen record at Storrs test by completing year with a total of 3791 eggs and 4098.7 points. A Kauder hen, laying 340 eggs and scoring 372.3 points at the Storrs test, establishes a new all-time individual hen record for U. S. standard tests.

OCTOBER

Oct. 10—Milo Perkins, president of the Federal Surplus Commodities Corporation, reveals that 24.7 per cent of the stamps distributed under the food stamp plan from May 16 to August 26 in five test cities went for the purchase of eggs.

Oct. 12—New Jersey Turkey Research Station, first experimental station devoted exclusively to investigation of turkey problems, dedicated at Millville, N. J.

Oct. 16—Hearing, lasting four days, on reciprocal trade agreement with Argentina, opens before U. S. Tariff Commission in Washington, D. C. Representatives of the National Turkey Federation, Northwest Turkey Growers Association, and International Baby Chick Association, also several senators and congressmen, oppose any tariff concessions on eggs or poultry, particularly on turkeys.

Oct. 19—Trial in suit of the D. L. Moss Company against the United States to have the tariff rate of 27 cents a pound on dried albumen, fixed under presidential proclamation of July 14, 1931, reduced to 7 cents a pound, opens in New York City.

Oct. 21—National Association of Food Chains issues bulletin urging its member chains to give as much early promotional assistance as possible to move the heavy crop of turkeys.

NOVEMBER

Nov. 3—Bill (H.R. 7616) introduced by Congressman Harry B. Coffee, Nebraska, calls for the establishment of a poultry division within the Agricultural Marketing Service of the U. S. Department of Agriculture, its function to be the assembling of statistics and information on production, marketing and utilization of poultry and poultry products; to establish grades and standards; and to grade and issue certificates of grading where called upon for this service.

Nov. 3—The Northeastern Poultry Producers Council and the Northeastern Federation of Egg and Poultry Cooperatives, meeting in New York City, decide upon a program of united action, placing the budget, the general program of activities and the marketing committee under the joint control of the two executive committees by means of interlocking directorates.

Nov. 4—Northeastern Federation of Egg and Poultry Cooperatives decides to terminate its negotiations with the New York Mercantile Exchange to establish a separate grade for northeastern eggs and to concentrate its efforts toward the creation of a central marketing office.

Nov. 10—Knox Boude dies at Sebastopol, Calif. While a member of the California legislature, he framed and had enacted the first legislation seeking the protection of the poultry industry from Chinese competition. He helped to formulate the first national tariff legislation for the poultry industry, and he was one of the organizers of the Poultry Producers of Central California.

Nov. 10 — Government economists, in annual outlook report, foresee heavier supplies of eggs in 1940, smaller hatchings, somewhat less favorable feed-egg ratio, and a smaller turkey crop.

DECEMBER

Dec. 2—Illinois wins 20th International Poultry Judging Contest at Chicago, Minnesota placing second, Mississippi third.

Dec. 11—The New York Supreme Court rules that butchers may be prosecuted for failure to attach the metal plumbas or tags of the Kashruth Association of Greater New York to poultry to indicate that it has been slaughtered in accordance with the dietary rules of the Jewish faith and therefore is kosher.

Dec. 12 — The Government's Agricultural Marketing Service announces that average size of farm laying flocks on Dec. 1 was 4 per cent greater than 1938 and 2 per cent above the 10-year (1928-37) average, and that average production of eggs per farm flock was about 10 per cent above Dec. 1, 1938 and 42 per cent above the 10-year (1928-37) average.

Dec. 12—The government resumes purchases of eggs in the New York Market by taking 100 cases of fresh firsts at 20 cents and bidding on others.

Dec. 21—New York egg-feed ratio reveals that 9 dozens of eggs are required to buy 100 pounds of the laying ration, compared to 4.9 dozens a year ago.

Dec. 23—Chicago egg-feed ratio reveals that 6.6 dozens of eggs are required to buy 100 pounds of the laying ration, compared to 4.3 dozens a year ago.

Dec. 29—Government reports the average United States price received by farmer for eggs in December is 20.5 cents a dozen, the lowest December price since the government reports began in 1910.

Mrs. Ramseyer, Iowa
Hatcherywoman, Starts . . .

A Consumption Program at Home

By H. K. Marcott

Condensed from Hatchery Tribune

TO let the public know that Ramseyer Hatcheries, Inc., Oskaloosa, Iowa, stand for new methods and progressiveness and wholly endorse the national campaign for poultry and egg consumption, Mrs. Florence Ramseyer conceived the novel idea of holding a poultry and egg cooking demonstration, inviting both city and country homemakers. The demonstrations, held in the afternoon and evening of November 6, 1939, featured uses for egg and poultry products and were designed to aid consumers to distinguish between good and poor quality poultry and eggs.

Formal invitations were printed and mailed to about 600 hand-picked city and country homemakers. Besides a short, one-paragraph announcement in the "local" column of the newspapers the day before the meeting was scheduled, the formal invitation was the only advance notice and publicity the event received.

After deciding on the type of meeting to hold, the next job was to procure a demonstrator. Mrs. Ramseyer turned to a friend working on a newspaper, who suggested that she contact one of the Iowa Newspapers Association cooking school demonstrators. Mrs. Christine Sanders, Denison, Iowa, was reached and accepted the job, and, although the time to prepare a special poultry and egg demonstration was short, she handled the assignment in a superb manner.

Local Firms cooperate

A furniture company readily agreed to supply all the furniture needed; a glass company supplied wall mirrors for decoration purposes and a large mirror, which was placed behind the demonstrator enabling the audience to follow the demonstration more closely; a jewelry company supplied dishes and silverware; the Iowa Power and Light Company supplied an electric stove and other electrical kitchen equipment; a church supplied chairs; the garden department of the Oskaloosa Woman's Club took charge of decorations; members of Beta Sigma

Poultry-Dairy Publishing Company, Mount Morris, Ill.
(Hatchery Tribune, Dec. 1939)

Phi sorority of William Penn College, Oskaloosa, and ladies of the First Presbyterian Church served refreshments in the form of dainty chicken sandwiches and coffee after each demonstration.

On the day of the meeting, ladies were busy everywhere; the place was buzzing with excitement and preparation. Overnight one of the private offices had been transformed into a kitchen; the main office and reception room had more the appearance of a huge party room, with the latest style dining room furniture adorned with spotless linens and shiny glass and silverware on the tables. Ladies get much enjoyment from looking at beautiful tables set with the latest accessories and according to the latest style.

Crowd Exceeds Expectations

The chick room had been transformed into an auditorium. Mrs. Sanders and her assistant were busily making last-minute preparations. Chairs to accommodate 100 guests were in order and another room was being vacated to take care of the overflow, if necessary. It was necessary.

Opening the meeting herself, Mrs. Ramseyer briefly explained the purpose of the gathering, pointing out that this was simply the small part she hoped to play in the large national campaign for increasing egg and poultry consumption.

Throughout the cooking demonstration featuring only poultry and egg products, there was never a letup in attention and interest. Naturally, a lot of this can be attributed to the fine work of Mrs. Sanders, but we also believe that these wives of doctors, lawyers, merchants, teachers and farmers were just as interested in learning how to distinguish quality poultry and eggs and new ways to prepare them, as Mrs. Ramseyer was that they should be.

The evening demonstration was just as well attended as the one held in the afternoon. It is true that a very small percentage of those attending Mrs. Ramseyer's poultry and egg demonstrations will ever buy a baby chick, but they are interested in buying good poultry and egg products. Oskaloosa is a town of about 10,000 population.

Should Increase Consumption

We are almost certain that Oskaloosa, Iowa, poultry and egg dealers are going to sell more poultry and eggs than before this meeting was held. If they do, Ramseyer Hatcheries are also going to sell more chicks.

◄◄ A. H. HARTLEY, Greenough, Montana, found a sapphire in a turkey he had dressed for a holiday feast, according to Turkey World. The stone was valued at $22.50.

Research Needed on Poultry and Egg By-Products

By Morley A. Jull
University of Maryland

Condensed from Everybodys Poultry Magazine

RESEARCH is a splendid investment for improving conditions in any industry and for increasing the profits of the producer. During the past quarter of a century, however, most of the poultry research funds that have been made available by federal and state governments have been used to promote efficiency in production. The value of this research to producers is thoroughly appreciated by most of them because they are able to make greater profits out of increased egg production through the adoption of improved feeding practices and better methods of breeding that have resulted from research. Losses from disease have also been curtailed considerably as a result of research findings.

More recently, research workers are turning to the products of the industry with a view toward improving their quality and decreasing the losses in shipping eggs and poultry meat of various kinds. There is still much to be accomplished for the simple reason that every year in the United States many millions of dollars are lost because of poor quality stock, inferior diets that are sometimes fed, bad management practices which are sometimes followed, and the wastage which normally occurs in marketing eggs and other poultry products.

In addition, there is much need for undertaking research on the use of the by-products of the poultry industry. The Federal Government has recently appropriated money to establish four regional research laboratories: one for the South, one for the West, one for the Middle West, and one for the East. These research laboratories have been established for the purpose of undertaking research on the non-food uses of various agricultural products including cotton, sweet potatoes, peanuts, tobacco, apples, Irish potatoes, milk products, vegetables, corn, wheat, fruits, and alfalfa. Poultry and poultry products are not included in the list of projects to be undertaken.

Farm Products in Industry

The average person in this country has little conception of the possible non-food uses of various agricultural

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products. Judging from what has already been accomplished, it would appear that the four regional research laboratories can accomplish much for the different commodities which have been mentioned above.

Soybean Uses Many

Soybeans are a very important crop in the United States, and by-products of soybeans are used in many different ways in the industries, including soybean oil for paints. From corn there are manufactured such things as sizing material for the backs of carpets, adhesives, rayon fiber, and a tanning agent. Protein from alfalfa is used for making plastics. Grape seeds yield an oil used in lubricants and soaps. Zein is a protein in corn, and is used in making plastics, waterproof wrappers, quick drying printing ink, films and fibers. Cattle grease is a source of glycerol that may be used either as an anti-freeze for the family car, or to incorporate in explosive dynamite.

The increasing popularity of the practice of marketing full-drawn poultry is contributing to more efficient utilization of by-products, for most by-products assume value only when they are available in large quantities. As an example, the recovery and use of the endocrine glands may be cited. The pituitary, thyroid, parathyroid, adrenals, pancreas, and gonads of chickens have the same properties and medicinal uses as the same glands in cattle and swine, and while some of these glands are too small in poultry for practical recovery, others are being recovered at the present time in some killing and dressing plants.

Another by-product that has increased in importance as the result of the increase in full-drawn poultry is the offal. This material is processed and converted into fertilizer.

Feathers constitute one by-product of which the importance has long been recognized. The drying and saving of feathers from individual birds has been replaced by machine methods in the large killing and dressing plants. Feathers are used in the manufacture of pillows, cushions, mattresses, dusters, and millinery.

As a by-product of the hatchery industry, there are large numbers of infertile eggs, and these with inedible eggs from other sources find an important use in the tanning of leather.

Surplus Egg Whites

Dried egg white is a by-product in egg drying, since there is much greater demand for dried yolk than for dried white in the food industries. The dried whites are used in the clarification of wines, preparation of medicinals, egg shampoo, printers' ink, soap and varnish and oils for art paintings, for adhesive purposes, in cementing cork to bottle caps, as a fixing agent for pigments, in gilding books in bookbinding, and in photography, paper sizing, and textile dyeing.

Some of the by-product uses mentioned are minor ones, but there is one by-product not yet mentioned which probably has greater total value than any other by-product. This product is poultry manure. Because of the relatively large proportion of concentrates and small proportion of roughage consumed by poultry in comparison with other farm animals, poultry manure is richer in nitrogen and phosphoric acid than are other manures and is worthy of special care and attention.

Possibilities for Research

For the convenience of those interested, the following nine items are listed for the purpose of focusing attention upon available by-products of the poultry industry and the possible non-food uses to which they may be put as the result of research:

1. Utilization of many thousand pounds annually of glandular portions of poultry offal in the preparation of hormones for fundamental biological research with various classes of animals.
2. Utilization of many million pounds annually of blood, offal, dead birds and manure obtained from slaughtered birds.
3. Utilization of several million pounds annually of feathers for insulation or other industrial purposes, and as a source of cystine.
4. Utilization of about 700 carloads annually of incubator rejects for industrial or fertilizer purposes.
5. Utilization of several thousand pounds annually of feet and shanks as sources of fibers, catgut and for other purposes.
6. Utilization of thousands of pounds annually of egg shells obtained from egg breaking plants.
7. Utilization of yolk oils in the tanning of leather, the manufacture of soap, cosmetics and vitamin concentrates for animal feeding.
8. Utilization of surplus egg whites, particularly from the standpoint of the development of thermoplastic adhesives.
9. Utilization of enormous quantities of inedible and other bad eggs and emaciated and diseased poultry as dog and fox food.

Basic Research Necessary

In Senate Document No. 65, recently published by the Federal Government and dealing with the survey made by officials of the Department of Agriculture looking toward the development of specific research projects to be undertaken at the research laboratories, is the following statement:

> "Research now in progress with food as an objective may be adaptable to non-food industrialization of these materials, but most of the projects now under way in research laboratories, as well as those which have been suggested to the Department, do not give promise of immediate results on a developmental basis."

This appears to be a very peculiar statement for the Department to make, because it is tantamount to saying that inasmuch as certain lines of research work have not been undertaken, the government should not assist in fostering them. As a matter of fact, the inability on the part of the poultry industry to undertake much needed research on the non-food utilization of poultry by-products is the very reason why the Government should come to the assistance of the poultry industry.

The Government has done a great deal for the soybean industry and for many other crops, the economic importance of which is not nearly as great as the poultry industry. With this in mind, it is suggested that the Government should undertake basic research which will finally lead to the development of processes for manufacturing as many articles as possible out of various poultry by-products for non-food use.

Exploring the Egg

Basic research should be undertaken for the purpose of isolating such biological principles as lysozyme of egg white, an agent which digests certain types of micro-organisms. It should be undertaken looking toward the isolation of the anti-tryptic compound of egg white, an agent which inhibits the action of protein-splitting enzymes like trypsin. Research should also be undertaken concerning the possible industrial uses of lecithin from egg yolk, for it has already been determined that when lecithin, derived from soybeans, is added to lead-ethyl gasoline, the formation of cloudiness in the fluid is prevented, and an anti-knock gasoline is produced.

Research should be conducted on the utilization of egg albumen as a thermoplastic adhesive, as a clarifying agent in wines, for calico print, for color photography, as sizing for paper, as a reagent in dyeing, and in the preparation of such compounds as ammonium, iodine, and quinine albuminate.

Research should also be conducted on the more efficient utilization of incubator rejects and rots for tanning leather. Research should also be conducted looking toward the development of vaccine preparations from chick embryos. It is possible that research might accomplish something in the direction of recovering small fibrils of feathers for spinning and weaving purposes. Other lines of research should also be undertaken for the purpose of determining the most efficient utilization of several by-products of the industry that are completely wasted. Research might well be undertaken at one or more of the laboratories which might easily lead to the saving of several million dollars annually.

ATTEMPTING to kill a turkey for market proved fatal to Forrest E. Emmitt, Roseburg, Oregon, turkey producer, according to The Poultryman for December 22, 1939. Emmitt was using a keen-bladed knife which was driven into his body near the heart by the bird's flailing wings. In a few minutes he was dead.

Efficiency Factors on Poultry Farms

By E. G. Misner

Cornell University

Condensed from a Talk

BEFORE the thirties, poultry farmers made a living with from 500 to 1,000 hens. This did not represent full time employment. Returns from poultry were higher than from most other farm enterprises in those years. It is now necessary to keep more birds to make equal labor returns than before the thirties.

A flock of from 1,500 to 2,000 birds constitutes a one-man poultry business. With exceptional building and equipment arrangement, and unusual facilities for caring for eggs, the number of birds handled per man may be increased somewhat beyond this. But the average size of laying flock in practically all commercial poultry areas in this country is less than 1,500. In New York, 85 per cent of the commercial poultry farms have less than 2,000 birds and about three-fourths of them have less than 1,500. Only two-thirds of the farms have the equivalent of two men or less, including the operator, on a yearly basis.

Up to approximately 2 hours are required per hen for all labor on the laying flock on a commercial farm where eggs are cleaned, graded and packed. In addition, ½ hour is required per pullet reared. Thus, a flock of an average number of 2,000 layers with half replaced annually would represent 450 ten-hour days of direct labor on poultry, in addition to improvement work about the place, when the chicks are purchased. This unit is not within the accomplishment of one able man. It could be handled readily by an operator with some help from other members of the family. To maintain an average number of 2,000 birds requires a larger number at the beginning of the year.

Man-Work Units

The productive-man-work units of 10 hours each are a better measure of the size of a poultry business than any other factors which measure size. The productive work units indicate not only the amount of labor represented by the laying flock but also that for the chick business and for rearing pullets and males.

From 15 to 20 work units of 10 hours each, depending on the area, are required per 100 layers, about 3 per 1,000 chicks hatched, and about 5 per 100 pullets raised. A business with an average of 1,500 layers would represent 300 work units, with

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 2, 1939

20,000 chicks hatched 60 additional work units, and with 1,500 pullets raised 75 additional, a total of 435 work units for the entire business.

Capital a Limiting Factor

The size of the flock is more limited by the capital required to grow, house and provide equipment for the flock, than it is by the amount of labor the operator can furnish in caring for birds and their products. As little capital should be used as necessary to provide a favorable size of business, but sufficient capital, whether in the form of cash or credit, must be available to develop at least a business of an efficient one-man size. Often the development of opportune size is delayed by the lack of sufficient capital for fixed assets or for operating expenses or both.

The most important phase of the management of capital is the protection of the original investment. Investment in the poultry enterprise should be so restricted that the original capital used will not be impaired. Usually $10,000 or more capital is required for a favorable size of poultry business. The average found on New York poultry farms was $8,198 per man employed, $220 per $100 receipts, or $12.60 per bird.

Flock Size and Profits

In a five-year study in New York, 1929-33, it was found that the operator's labor income increased about $1 for each additional bird kept in the large flocks over the labor income with small flocks. In the worst of the depression years, including the present time, the increased return to the operator for his labor has been less than $1 per additional bird, while in the best of the boom years, it was more than $1 per bird.

In the same study, an average increase of $1,000 in capital employed was accompanied by an increase of $41 in the labor income of the operator. During the period of this study, 1929-33, the ratio of prices of poultry products to cost of production was sufficiently favorable that a 5 per cent return would result on additional capital employed in the poultry business, and the operator's labor income also be improved. During this period, apparently the point of diminishing returns in the employment of additional capital was not reached. It was profitable to employ additional amounts of capital in the poultry business without any particular limit. While some years have been favorable enough to make this possible since 1932, there have been a few years when there was little if any advantage in having a large poultry business. The fluctuations in the ratio of costs to prices received have been broad since 1932, making a large poultry business more risky than it was for the 10 years previous to 1932.

One of the often overlooked or forgotten phases of the influence of size of business on profits is that when the cost-price ratio for an enterprise is unfavorable, larger losses may result with a large than with a small business, just the same as that larger profits may result when the cost-price ratio is favorable.

If the rate of production is high enough and the capital sufficient to provide more birds than required by a full one-man business, optimum efficiency will result only when enough more business is provided so that a full two-man, a three-man or so on plant will result.

More Birds per Man Needed

The skill required for the business is so great that poultry will continue to be one of the better paying farm enterprises, but trends seem to indicate that a larger number of birds per man will be necessary in the future to make labor returns from poultry equal to those of the 10 years from 1920 to 1930.

How far it pays to expand a poultry enterprise depends primarily on the long-time average rate of production per hen year after year, that it is possible for an operator to obtain. The average rate of lay in commercial flocks seems to be about 12 dozens of eggs per hen in most parts of the country. Some areas get a higher production than this; especially where climate is favorable.

High production per bird is mainly the consequence of healthy, sturdy birds that are grown from healthy, production-bred stock.

The influence of kind of feed, proportion of mash and grain, methods of feeding, use of green feed, confinement versus free range or other management factors whatever they may be, appear to have relatively little to do with the rate of production in general. Sudden changes of weather, especially temperature, affect production, but rations and methods of feeding are so standardized at present that the best assurance of heavy production appears to be good, well-grown birds and high feed and water consumption. A large intake of a good poultry ration and of plenty of water and regular care of such birds generally results in a high rate of lay. Very few poultrymen obtain a high rate of production year after year. Studies show that about three-fourths of those on New York commercial farms produce less than 160 eggs per hen.

With an average production of 12 dozens of eggs per bird, about 7 pounds of feed are required on commercial poultry farms to produce a dozen of eggs. A high rate of production requires a high feed consumption per bird, and, conversely, a high rate of feed consumption generally results in a good rate of lay with lay-bred stock.

Eggs per Hen and Profits

Although a high rate of production is essential for a good labor income, it is less important on farms which derive a large percentage of their income from chick sales than it is on exclusively market egg farms. A 6-year average, 1926, 1929-33, from 753 accounts in New York, shows that on farms not selling chicks, when the eggs laid per hen were 60 per cent of the average, the labor income was 85 per cent of the average, and the cost of producing eggs 138 per cent of the average.

When the eggs per hen were 140 per cent of the average, on farms not selling chicks, the labor income was 115 per cent of the average and the cost of producing eggs 62 per cent of the average. An increase of one dozen in eggs laid per hen was accompanied by an increase of $176 in the labor income, and by a decrease in cost of 1.52 cents per dozen of eggs.

If an average number of 1,000 birds is kept per man and these produce at an average rate of 12 dozens of eggs per bird, and one man takes care of them, 12,000 dozens of eggs will be produced per man equivalent. In the relatively prosperous years for the poultry enterprise of 1929—33, at least 12,000 dozens of eggs were necessary per man equivalent employed on the poultry farm to result in a good labor income.

Eighty-three per cent of the commercial poultry farms in New York State produce less eggs per man than 12,000 dozens, but some of these men have other small enterprises as part of the business. The average is about 8,000 dozens. If a poultryman cares for 2,000 birds which lay 12 dozens of eggs per bird, he will produce 24,000 dozens of eggs per man. While this is not impossible, it is very seldom found on commercial poultry farms.

On New York commercial poultry farms, a gross income of more than $5,000 per man was necessary for a good labor income.

The gross income per man shows a very definite relation to labor income. As a five-years average on commercial poultry farms, in New York, an increase of $100 in gross income per man was accompanied by an increase of $69 in the labor income. The increase in labor income was higher per $1,000 increase in gross income during the good years preceding 1932 than since.

An increase of 1,100 in birds per man was accompanied by an increase of $143 in labor income in New York, and an increase of 1,000 in dozens of eggs per man was accompanied by an increase of $154 in labor income in New York for 1929-33.

Fall Production Important

One of the most important of factors is the percentage of lay obtained from October to December. In order to obtain a high rate of production in the months when, for the country as a whole, the least total eggs are produced and when eggs are therefore high in price, it is necessary to have early hatched pullets so that a high rate of lay of good sized eggs results in these months. This necessitates starting chicks earlier in the year than is done by the majority of the poultrymen. It is also important to maintain a high rate of production on the old birds already in the laying flock. The average percentage lay in the fall has been increasing and is now probably about 30 per cent for the months October to December, in New York. An increase of one in the percentage lay in these months, as a 5-year average in New York, was accompanied by an increase of $51 in labor income.

Keep Mortality Down

Another factor which is quite important is the rate of mortality of the laying flock. During a six-year average on New York farms, ending with 1933, the operator's labor income decreased about $1 for each bird that died. Under present conditions, it would not increase as much per additional bird kept nor would it decrease as much per bird that died as was the case before 1934 when prices were better. An average rate of mortality is about 20 per cent of the original number.

Diversification Pays

Diversification is a principle of good business management. The old saying "Do not put all of your eggs in one basket" holds for the poultry business. The primary aim of diversification is to provide fuller employment. To this end, the poultryman must diversify within his specialized poultry business. The chick trade,—baby and started—, pullets to sell, broilers and roasters in some areas, are types of diversification that make a well-balanced poultry business. The selling of pullets as a method of diversification is seldom justified unless the poultryman is doing his own hatching and has a good large range area so that only high grade vigorous disease — free pullets can be raised and offered for sale. From the standpoint of the egg producer, it is more economical for him to raise than to purchase pullets.

Results for other areas are not available but as an average for 5 years prior to 1934, the New York farms which sold baby chicks had a 60 per cent larger operator's labor income than those with the same size flocks which did not sell chicks.

The additional time, attention and investment required to produce good chicks anticipates a sufficient volume of trade to justify the development of that part of the poultry business.

Details of Hatchery Flock Agreements

By T. S. Townsley

Condensed from Smith's Chickagrams

SOME of the fundamental points that should be covered by an agreement between the hatcheryman and his hatchery flock owners are:

1. Rules for culling the flocks.
2. Flock feeding requirements.
3. Delivery and care of eggs.
4. Grading of eggs.
5. Premium to be paid.
6. Time and method of payment.

Most all hatcheries now follow some rather definite culling and blood testing program; and definite rules regarding the charges, if any, for the culling and testing; the method of marking the good birds; and the matter of how and when the culls are to be disposed of, should be covered by the flock agreement.

Feeding Program

Some hatcheries require all flock owners to follow a certain feeding program, and where such is the case, the details should be clearly stated in the agreement.

There should be a thorough understanding about when and how eggs are to be delivered, or collected, so they will be available when needed.

The requirements on egg size and shell quality should be clearly stated, and provisions be made for holding the flock owner to a strict grading program. This is often covered by provisions for deducting from the regular price for cull eggs sent in for hatching.

Premium arrangements on hatching eggs vary greatly with different hatcheries, but this should be carefully worked out and thoroughly understood by both the hatcheryman and the flock owners.

Many hatcheries pay cash on delivery for eggs. Others mail a check after the eggs are trayed. Some pay a week after delivery, and a few do not pay until the eggs hatch. Whatever the method of payment, promptness and accuracy are necessary to keep the good will of the customer.

Educating Flock Owners

Time and effort spent in making the flock owners thoroughly familiar with the hatchery program are good investments for the hatchery. Not only is the full cooperation of the egg producers necessary for producing good chicks, but they can and should be a great help in selling chicks. If the flock owners understand that their premium on eggs depends absolutely on the hatchery's demand for chicks, they can be made good boosters for the hatchery, providing they feel they are getting a fair share of the proceeds.

Many hatcheries have flock owner meetings at least once each year to explain the hatchery program, and foster good will. Some issue regular flock owner bulletins, and some arrange tours to show desirable flock management practices in actual use.

As in any line of business, good will is established by fair treatment, and honest dealing between the hatcheryman and his flock cooperators.

The Smith Incubator Corp., Bucyrus, Ohio
(Smith's Chickagrams, Dec. 1939)

Egg Yolks Used in Producing Test Tube Calves

A "test tube calf" experiment was conducted recently in which sperms from a purebred Jersey bull at the Golden Gate International Exposition at San Francisco, Calif., were flown in a refrigerated test tube to New York where they were used to inseminate 2 prize Jersey cows at the World's Fair. In order to do this, the sperms were suspended in a new type of "buffering" solution consisting of the yolk of fresh eggs mixed with chemical salts.

The purpose of the buffering solution is to furnish the energy necessary to maintain life in the sperms. The sperm, being a very small cell, has no source of energy until it unites with the egg, its counterpart. If the sperm is to be kept for any length of time or transported long distances, some food must be provided. The yolk furnishes this food and at the same time serves as a diluting agent for the sperm, making it possible to inseminate more females than could be fertilized if the concentrated semen was used.

Of particular interest was the fact that the buffered sperms possessed much less motility than did concentrated sperms. This means that their rate of metabolism was slowed down, thus lengthening their lives. Sperms in the new solution were shown to possess good vigor for as long as 15 days.

—American Poultry Journal, Jan. 1940.

ONE POULTRYMAN in England recently was fined for his offense against black-out restrictions, according to Eggs, December 6, 1939. Another poultryman, however, tells of being able to carry out such jobs as filling water fountains at night by the light furnished by Government search lights sweeping the skies for enemy air planes.

POULTRY RESEARCH

Temperature and Humidity Affect Egg Shell Thickness

Egg shell thickness is decreased when the layers are subjected to high temperatures, and more noticeably so when accompanied by high humidity, according to studies by D. C. Warren and Richard L. Schnepfel, Kansas State College, reported in Poultry Science for January, 1940 (Vol. 19, No. 1).

This work confirms the observations of poultry raisers who find that egg shells seem to become more fragile in the spring and summer months. The decrease in shell thickness is attributed to a reduction in the calcium content of the blood when high temperatures prevail.

When the temperature was raised from 60 to 95 degrees Fahrenheit, the feed consumption decreased 26 per cent. Whether or not this drop in feed consumption is directly responsible for the reduction of the calcium in the blood is not indicated by the investigators.

Carbon Dioxide and Vacuum Pack in the Storage of Eggs

The use of carbon dioxide and also the vacuum pack to preserve the interior quality of eggs in storage were studied by L. A. Wilhelm, Washington Agricultural Experiment Station, and his results are given in Poultry Science, Jan. 1940 (Vol. 19, No. 1).

Eggs were placed in cartons and also in sealed containers. One of the airtight containers was sealed under normal atmospheric conditions. In another, the air in the container was displaced by carbon dioxide, while in a third, the air was exhausted and the container sealed under a vacuum. The vacuum-carbon dioxide release treatment involved the same procedure, but in addition the vacuum was released with carbon dioxide before the container was sealed.

None of the treatments was superior to that of eggs packed in cartons for short time holding at the usual storage temperature of 30 degrees Fahrenheit. When eggs were held at temperatures above normal storage temperatures, the packing of fresh eggs in air-tight containers effectively reduced quality losses from those packed in the usual manner.

The use of carbon dioxide resulted in a turbid albumen, but it was effective in preventing the loss of interior quality when the eggs were held at high temperatures.

Vacuum packing of fresh eggs

was found superior to the usual method, but had little advantage over sealing the eggs in an airtight container. Furthermore, vacuum packing caused the thick albumen to adhere to the shell membranes.

Eggs stored in a vacuum-carbon dioxide release were not consistently superior to those stored in an atmosphere of carbon dioxide.

Eggs packed in airtight containers developed molds quite rapidly when held at high temperatures unless carbon dioxide was added.

Mold Development on Cold Storage Eggs

That molds on eggs come from contamination from such sources as handling and packing, both before and after reaching the cold storage plant, was revealed in a study by W. L. Mallmann and Catherine E. Michael at Michigan State College, reported in the U. S. Egg and Poultry Magazine for January, 1940.

The molds are present in the nest and on the feathers of the birds. Their spores pass unharmed through the bird's intestinal tract, indicating that eggs are laid in an environment heavily seeded with mold spores.

Molds were found not only on used packing materials but on new cases, flats and fillers. The organisms are common contaminants of the storage room, particularly when humidity is high enough to support their growth.

Although the environment and shells of fresh and moldy eggs were found to contain a large variety of molds, not all of them penetrated into the interior of eggs under cold storage conditions. Only two genera consisting of 25 species of one mold and four strains of another were found in molds isolated from within the egg.

Fine vs. Coarse Grit

The fine waste material which results from the crushing and sifting of granite in the manufacture of various sizes of poultry grit is commonly termed "granite waste" and is discarded by the manufacturers. Workers at the New Hampshire Agricultural Experiment Station made a study (N. H. Agr. Exp. Sta. Cir. 56) of this material to determine its usefulness as grit for chickens.

Three groups of 75 Barred Plymouth Rocks chicks were used. At maturity the numbers were reduced to three groups of 24 pullets, which were placed in laying cages for the remainder of the test. One group received 1 per cent of chick size grit to 16 weeks of age and the same amount of hen size grit thereafter. A second group received 1 per cent of fine granite waste, and a third group received no grit. All groups were fed both grain and mash. Histological examinations were made of gizzard linings and portions of the intestinal tract at intervals of four weeks.

The authors concluded that the feeding of grit was not essential for efficient growth and feed utilization during the first four weeks, but that it did increase the efficiency of feed utilization in older birds.

Fine granite waste was not detrimental to growth during the first 16 weeks, but its detrimental effects were cumulative and began to appear after maturity.

Fine granite waste seriously interferred with both efficiency of feed utilization and egg production in laying birds, and was injurious to the lining of the digestive tract.

—L. E. Card, Poultry Tribune, Jan. 1940.

Efficiency of Various Cereals in Producing Fat on Cockerels

Corn was found to be the most efficient cereal used in the production of fat in White Leghorn cockerels in tests conducted by H. M. Harshaw, U. S. Department of Agriculture, and reported in Poultry Science, Nov., 1939 (Vol. 18, No. 6). Wheat was only slightly less efficient, followed in order by barley and oats. A normal all-mash growing ration serving as a control feed, proved superior to barley and oats in producing fat.

Corn and wheat produced a lower percentage of edible meat than oats or barley, however, suggesting that a mixture of two or more cereals is desirable in feeding poultry for market. The four cereals used showed no tendency to cause any difference in the distribution of fat in the edible portions.

Feeding Kalo to Chicks

With the increased importance of grain sorghums in the cropping plans of many farmers, the nutritive value of these feeds is being studied with several different types of farm animals. Experiments recently reported (Nebr. Agr. Res. Bul. 109) from the Nebraska Agricultural Experiment Station show the effect of replacing ground corn with ground kalo in rations for young chicks.

The purpose of the tests was to compare the utilization of nitrogen, calcium and phosphorus in a standard ration with that in the same ration when corn was replaced by kalo. The chicks used were White Plymouth Rocks averaging 37 grams in weight at the beginning of the test.

The rations were fed in pellet form so that the chicks had no opportunity to pick out separate particles or ingredients. The amounts of feed consumed by the different lots were kept identical by hand-feeding equal amounts of the two rations daily.

It was concluded that the substitution of 31 per cent of ground kalo for 31 per cent of ground corn in an otherwise complete ration for growing chicks had no significant effect on the rate of growth up to six weeks of age.

The retention of nitrogen, calcium and phosphorus was not significantly altered by the use of kalo in the ration.

—L. E. Card, Poultry Tribune, Jan. 1940.

Supplements for Soybean Oil Meal

The increasing use of soybean oil meal in poultry feeding makes it important to know what supplements are most effective in bringing out the full feeding value of the meal. Trials made at the Wisconsin Agricultural Experiment Station (Poultry Science, Vol. 18, No. 6) were designed to test the relative value of the vitamin or protein carried in various crude supplements to the "soybean meal-grain" ration for growing chicks.

The supplements used included dried skim milk, whey, yeast, autoclaved yeast, meat scraps, liver meal, and sardine oil meal.

Chicks fed 3 per cent of sardine oil meal grew more rapidly than did any other group receiving a single supplement to the soybean oil meal-grain mixture.

The average weight of chicks fed a combination of meat scraps and liver meal was greater than that of chicks fed either supplement alone.

The protein of whey was without value as a supplement to the ration used, and it is assumed that the supplementing value observed was due to vitamin content of the whey.

For maximum efficiency of the protein in the soybean oil meal-grain ration, some potent source of riboflavin and possibly of other vitamins must be fed.

The protein of the grains supplemented solely by soybean oil meal is sufficient.

—L. E. Card, Poultry Tribune, Jan. 1940.

Blackhead Inoculation

Inoculation against blackhead has made a big step forward, toward practical realization, as a result of the experimental inquiry by famed Dr. E. E. Tyzzer of the Harvard Medical School, published in the Journal of Comparative Pathology, 49, p. 285. Some birds became completely immune to the disease. In partially immunized birds, the disease was delayed, of shorter duration and reduced severity. According to recent reports, this principle of investigation is being applied in Great Britain under practical conditions with very satisfactory results.

The now generally accepted fact that the egg of the pin worm found in the blind intestines of turkeys or chickens is an intermediate host of the organism causing blackhead is further demonstrated by Tyzzer. Dr. A. J. Durant of the Missouri State Experiment Station, virtually incriminates these worms as the intermediate host, since his observations suggest that turkeys seldom contract blackhead in the absence of the caecal worm (Jl. Am. Vet. Med. Ass'n, Vol. 90, p. 596).

—Carl H. Schroeder, Everybodys Poultry Magazine, Jan. 1940.

Paratyphoid in Turkeys

Paratyphoid in turkeys is increasing in prevalence and economic importance. A study made by Drs. B. S. Pomeroy and R. Fenstermacher of the University of Minnesota represents one of the important contributions to our knowledge of this disease. In addition to the identification of some of the organisms of the Salmonella group which cause this disease, one of the more common paratyphoid microbes was found present in hatching eggs, in dead-in-the-shell poults and in the ovaries and oviduct of infected birds.

As with pullorum disease in chicks, the practical approach to the problem is through the application of blood tests to detect infected individuals in the breeding flock. Thus, the development of a satisfactory antigen should be the next logical step. (Journal of the American Vet. Med. Ass'n, Vol. 47, No. 2).

—Carl H. Schroeder, Everybodys Poultry Magazine, Jan. 1940.

Laryngotracheitis Agent in Other Organs of Fowl

The agent causing laryngotracheitis has been found not only in the respiratory organs, but also in the abdominal cavity, and the intestines. Indeed, according to Dr. C. A. Martin of the Spanish Institute of Animal Biology, the richest concentration of this virus is to be found in the mucous walls of the duodenum. Lice, mites and other external parasites are capable of transmitting the infection. Experimentally, the disease can be produced through the digestive as well as the respiratory tract and through the skin when the skin is injured. Martin feels that the name laryngotracheitis is not satisfactory since other organs are affected. (Report by the Inst. of Animal Biology, Madrid, Vol. 4, p. 7).

—Carl H. Schroeder, Everybodys Poultry Magazine, Jan. 1940.

Identifying Barred Rock Chick Sex by Type of Head Spots

An accuracy of 98 per cent in sexing day old Barred Rock chicks by type of head spot and color of shanks and feet, was obtained by Fred N. Jerome, Bray Hatcheries, Hamilton, Ontario, and reported in Poultry Science for November, 1939, (Vol. 18, No. 6).

Jerome found that the cockerel head is irregular in outline and scattered in appearance. At the front, the spot is blunt and of a fairly solid light color. Centrally, the spot becomes intermingled, sometimes completely covered with black. On the sides and lower end, the spot has scattered flecks of light colored down.

The pullet head spot was found to be more regular in outline. In general, it is oval in shape, pointed at the front, with a median line of the lightest down running from front to back and the light down gradually fading into black along the sides.

Cockerel shank color tends to be lighter than pullet shank color. Color of cockerel shanks and feet blend evenly and practically the same throughout. Pullet shank color is usually black or dark amber, ending abruptly at the base of shank or a short distance out on toes and remainder of toes is much lighter.

Jerome found cockerel down color is generally gray and pullet down color black. Margins of white markings on lower part of body and tips of wings are usually more distinct in pullet chicks than in cockerel chicks.

With a little practice in this method, the sexor should obtain an accuracy of 95 per cent or better, according to Jerome.

Down, Shank and Beak Color in Determining Sex of Chicks

While down color and shank pigment have been used to determine the sex of Barred Plymouth Rock chicks with an accuracy of 91.8 per cent, Joseph P. Quinn and Charles W. Knox, U. S. Bureau of Animal Industry, report in Poultry Science for January, 1940 (Vol. 19, No. 1) that down, shank and beak color did not prove to be an accurate means of determining the sex of Jersey White Giant, Jersey Black Giant and White Plymouth Rock chicks.

An accuracy of 57.8 per cent was attained in identifying the sex of Jersey Black Giant chicks by down color. Since 50 per cent accuracy should be possible through random selection, down, beak and shank color could not be considered of any value for sex determination in these three varieties.

WHEN somebody stole the Thanksgiving turkey belonging to George Hall, Meridan, Miss., he advertised that he would supply the thief cranberry sauce to go with it, according to a newspaper report.

AFTER American turkeys were introduced into Europe, they became so popular that Archbishop Cranner found it necessary to curb the appetites of his clergy for this meat. In the midst of his difficulties over the private life of Henry VIII, he decreed that a "turkey cocke" was one of the "greater fowles," of which the clergy was to have "but one in a dish."

—Turkey World, December, 1939.

A New Idea in Egg-Cooling Rooms

From our 8,000 laying hens we gather enough eggs each day to make it profitable to have a specially equipped room to store the eggs. We use wire baskets to gather all eggs, insuring rapid cooling, and maintenance of the high quality in our eggs.

Our egg cooling room is 8 ft. wide and 22 ft. long and divided into two parts. In the end of one part is the mechanical egg grader and table that holds four cases for our four grades of eggs. There is enough space in this part for 45 cases of eggs. In the other part is enough space for 75 baskets of eggs. One group of baskets is hooked to the ceiling and another group sets on the floor. To fill the room to capacity, a third group of baskets is hooked to wires that extend half way from the ceiling to the floor.

On the wall in one part of the room is an ice compartment. As the ice melts it runs down a spouting, that is fastened to the side of the other part and empties in a drain at the far end of the room. From this spouting hangs burlap that stays moist continually, furnishing the room's humidity, that stays at 80 per cent.

For cooling the room we have the following: A 55-gallon water drum, with 100 feet of coils in the inside. The water is cooled with a 1-3-horse power compressor. This water is pumped through a Model T radiator, by a 1-3-horse power motor and water pump at the rate of 35 gallons per minute. Back of the radiator is a Buick fan that circulates the air.

The room is constructed of ½-inch lumber on the outside, 1-inch Celotex on the inside, with tar paper and 2 inches of shavings in the center. The room is kept at 60 degrees.

Since the hatching season, the last of May, over 90 per cent of our large eggs have been going in as "U. S. Large Special Pack," at the Versailles Egg Auction under U. S. Government Grade.

—John Gasson, Poultry Item, Jan. 1940.

Using Broken Turkey Eggs

With almost 800 turkeys in our breeding pens each year, we have more broken eggs than we know what to do with, even after supplying the needs of family and friends. In past years, we have let many of these go to waste or have fed them to the turkeys, but last spring, I decided to salvage this waste by putting the surplus in our cold storage locker for use during the season when the turkeys were not laying.

I procured a supply of paraffined ice cream containers in pint and quart sizes and set to work. The eggs were broken, part of the whites were separated from the yolks, and these yolks were put into the vessel where whole eggs were broken. Using the electric mixer, all were beaten, but only until they were well broken up. Then whites were poured into pint containers and whole eggs into quart containers and taken to the refrigerating plant at once. The temperature there is 10 degrees below zero.

The whole eggs are first-rate for scrambling and all baking needs, while the whites are just like fresh eggs for angel food cake and meringue. I keep the eggs frozen in the refrigerator after they are brought out from the locker (about a week's supply at a time) until shortly before they are to be used, when I measure out the quantity I need and let them thaw out.

We had the locker anyway for meats, fruits, etc., and saving eggs will save us several dollars each year.

—Mrs. Elbert L. Barrett in Turkey World, Dec., 1939.

Eggs for the Pep Cocktail

"I remember when what I now call my 'pep cocktail' was first suggested to me I shuddered at the very thought of it. But now I literally couldn't get along without it, and I recommend it to every one on the slightest provocation! Breakfast has always been a difficult meal for me. Food just doesn't seem tempting or interesting the first thing in the morning. When I went into business I began to find that the cup of coffee and glass of fruit juice to which I had been accustomed was not sufficient to carry me through a morning at work. By eleven o'clock I was quite hollow inside and exhausted to the point of incompetence. One day I remembered a formula for sustaining vitality which had been suggested to me years before by a chance acquaintance. I had never tried it out, but now I determined to give it a try. I began to take each morning an unbroken egg yolk in my glass of orange juice. It was amazing how quickly that simple thing increased my energy. Now each morning I swallowed two egg yolks in my fruit juice, and that awful eleven o'clock hollowness never keeps me from completing a morning's work."

—From the book, "A Woman's Place," by Hortense Odlum.—U. S. Egg and Poultry Magazine, Jan. 1940.

Molasses Bran for Bloody Coccidiosis

By Charles W. Peters

Condensed from Feedstuffs

MOLASSES bran is the finest thing we have ever used for controlling coccidiosis." Such is the unanimous opinion of more than 40 poultrymen in southern California, the owners of more than 50,000 pullets to which this treatment was fed for the first time in the spring of 1939.

A few California poultrymen, independently of university research workers, had experimented during the previous spring with molasses bran (flaky wheat bran, containing 15 per cent molasses), and had reported favorably on the results obtained. As a result of these local experiments, Donald E. Stover, in a Department of Agriculture bulletin issued in November, 1938, mentioned the use of molasses bran as an alternative substitute for the 40 per cent milk mash flush commonly in use. Recommendations, however, applied only to Eimeria tenella, the common bloody, or cecal, type.

Accordingly, with the approach of the 1939 brooding season, it was readily apparent to field workers that the molasses bran treatment would be rather extensively used. Such proved to be the case, and the following is a brief summary of the most satisfactory method of feeding employed to date, together with an outline of the program of sanitation used during the period of outbreak,

Fed at First Symptom

At the first indication of bloody droppings—usually the characteristic symptom of E. tenella – molasses bran was fed the first thing in the morning to the exclusion of all other feeds. This was kept before the birds continuously until noon, when they were fed their regular mash ration, followed by the usual feeding of scratch grains at night unless the birds had been accustomed to an all-mash ration.

This process of feeding was continued for three successive days: molasses bran in the morning, mash at noon, and scratch grains at night. During this period of treatment, and for four days immediately following —a full week in all—the floor of the brooder house was cleaned thoroughly each day. A thin layer of dry sand was sprinkled over the floor after cleaning in place of any other litter which may have been used. Spraying the floor with any form of disinfectants did not seem to be indicated as best results were obtained where

Miller Publishing Company, Minneapolis, Minn.
(Feedstuffs, Dec. 23, 1939)

the floor was kept as dry as possible.

In the 40 flocks above mentioned, with only one exception, the mortality did not exceed 1 per cent. In many cases the flocks recovered without the loss of a single bird. When one considers the basic factor involved in the treatment of this form of coccidiosis – that of regulating the rate of ingestion of sporulated coccidia until the bird may develop a natural immunity, which, in the case of E. tenella, is usually completed in five or six days —the results do not seem so amazing. On the contrary, they are only what might be reasonably expected.

No Excess Moisture

The particularly pleasing fact about the use of molasses bran is that sufficient flushing seems to be accomplished without an excess amount of moisture. Certainly, this in itself is an item of importance in conjunction with the program of sanitation so essential at this time.

The one flock where an excessive mortality occurred was an unfortunate case in that the flock owner, being a novice in the care of chicks, did not recognize the symptoms until 50 birds had died. Many more were badly infected and later succumbed. The flock was badly overcrowded and sanitation seriously neglected. Yet, in spite of this, after the beginning of the molasses bran treatment, over two thirds of the flock was saved and most of these were well on the road to recovery before the week's treatment was completed. This one case seemed to be the exception which proved the rule.

Don't Guess—Weigh the Feed

Don't guess at food intake at any season of the year. You must know how much your birds are consuming. While weighing feed involves some extra work, the maintaining of proper body weight, the extra large eggs gathered, and the fewer birds removed, more than compensate for the extra labor.

Weighing the feed daily is a common practice. However, it can be simplified by marking the number of pounds with a line on the inside of the pail you use to feed the scratch, mash, or pellets. Some poultrymen band 10 or 15 pullets and weigh them periodically to see if they are gaining, holding their own, or losing weight. Birds can be handled on the roosts at night rather easily and their condition of fleshing determined.

—E. S. Walford, Poultry Item, Dec. 1939.

Diary of a Poultryman

By P. S. White
Egg Farmer, Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

Jan. 1 – Like the two-headed Roman God, Janus, who looked backward as well as forward, I sat down today in solemn reflection. Nineteen-thirty-eight was good to me; I have no fault to find. I have the mental satisfaction in the year's work, and frankly, I am hard to please. First, I bought a new truck which has proved entirely satisfactory. Next there were four buildings painted and put in good repair. The last accomplishment, outside of paying taxes and our living expenses, was the construction of our tenant house. This is a six-room modern bungalow. I have also cast a wary eye into the new year. If my foresight could only be as good as the hind sight, life would be a pleasant dream.

Jan. 2–It took me a half hour to locate a pullet in the west house this afternoon. This bird had a few drops of blood on her due to picking, so treatment was in order. The old saying, "a stitch in time–" holds absolutely true in such cases.

Jan. 3–I was the first producer to the auction with eggs this morning. Guess the others had a little holdover from the double holidays. It is nice to know that one is the early bird. If the selling price was based on the order in which they were delivered to the auction, i.e., the highest price being paid for those delivered first, it would make an entirely different story. Someone would probably get killed in the rush, or at least badly mangled. I wouldn't be surprised if some producers would try to deliver eggs before they were laid.

Jan. 4 – Dennis Hiner, of over New Pittsburgh way, is evidently on the program committee for their Farmer's Institute. Anyway he was in search of a chicken speaker and phoned me. As I am listed in the Ohio Institute Speakers Directory, I thought it was high time I was putting out something. Last year, due to the Master Farmer award at the University, I had to refuse a couple of invitations. What is puzzling me is a timely topic. The farmers of this county are exceptionally well posted in poultry husbandry. I am thinking of discussing the construction of the bended-bow rafter brooder house. It will probably be best to confer with my cohorts, Ralph Treat and Verne Chamberlin. They have such level heads.

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(Everybodys Poultry Magazine January, 1940)

Jan. 6 – If this kind of weather continues much longer, snakes will start to lay eggs.

A bunch of the hens on the first floor are in a full molt. It has been such an open fall and winter that they didn't take time out to molt, but just kept on laying. They have the right idea; molt when eggs are cheap and lay when they are high priced. It also helps to balance production throughout the year.

Jan. 7 – Production is increasing among the layers too. Decreased prices, increased production, so the old weekly egg check should be about the same. That is what I need, a guaranteed weekly income. Then all above the stated amount would be gravy. But for some reason or other it doesn't seem to work that way. When everything is lovely I fly high; I am prosperous. If a cloud should come up I burrow around like a mole. And still I keep plugging away, cleaning boards, gathering eggs, packing, feeding, a chamber-maid in a chicken house. That is me, the Old Man.

Jan. 9 – I noticed a bird going around in circles this afternoon while feeding. Examination showed that she was blind in one eye. I don't like that kind of business, but I don't know what to do about it. I realize what this blindness means, so I will have to cast a suspicious eye around the hennery. If I find much more of it I suppose I will be going around in circles too.

Jan. 13 – And Friday too. They laughed when I took the truck in to be shampooed. It is the worst snow storm we have had this winter and they all thought I was crazy to wash the egg truck and then take it out in the snow and slush. But there was a method in the madness. The snow wasn't melting; the truck won't have to go out until Tuesday; I have a heated garage. This afternoon Will Wile and I jumped on the truck and waxed it and touched up the rusty spots. If the snow is gone by Tuesday, I will show the boys how to step high, wide and handsome. If the snow is still on the roads, the truck will be protected by the wax. Playing safe, I calls it.

Jan. 14–Yes, and it snowed some more last night. Snow is deep around the institution and today is cleaning day. Harold shoveled paths all around and right out into the pasture. Then the rubber-tired wheelbarrow rolled along like nobody's business. The more I see of that wheelbarrow the more I think of it. It plows through mud, snow and slush and, like Old Man River, just keeps rolling along. It doesn't cost me anything anymore; it has paid for itself.

Donnie and I waxed the car this afternoon. The automotive vehicles are dolled up to a fare-ye-well. The oil, grease and battery as well as the mechanical parts are right. I find that it is cheaper to spend money to keep them in good repair than otherwise.

Jan. 16—The weatherman said it was going to snow again and it did. Harold recleaned the paths early this morning. Snow drifted between the east and west house to the extent that passage was well nigh impossible. A brick walk connects the two houses. The walk is clear now but there is a pile of snow to melt. When it does the water should run in the road ditch and not make a sloppy mess close to the east house.

Found a hen lying on her back on the third floor this afternoon. She is in the furnace now. There is not much use of monkeying with them when they get in that shape.

Jan. 18—Dennis Hiner phoned today that the Grange committee had postponed my talk at New Pittsburgh until 2 p.m. I had been scheduled at 10 a.m. This Grange business sure is a popular indoor sport at this time of the year around this neck of the woods. I am listed on the program as: Talk — Percy White. It appears to me that this covers a lot of latitude, longitude and altitude. In fact, I think it covers well nigh the whole universe. But I am going to throttle it down to one subject and a few casual remarks. I think I will talk about the actual construction of the bended-bow rafter brooder house. How the rafters are bent seems to be such a mystery to so many people. Folks have come in here for miles around to see these brooder houses.

Jan. 19—Put on some store clothes after dinner and went to the Institute. Quite a nice size crowd, about 100, I would judge. Fifteen years ago this month, I went to a Farmer's Institute in the same building. It was the first Institute I attended in Ohio. Since that time much water has flowed under the bridge. During high waters, some of it went over the bridge as well as under.

Jan. 27 — It is great to work the old head and have it work. Last night I could tell at a casual glance that the thermometer was dropping. So at 12:30, I went out and drained the pipes. It's great to have water run out of a pipe instead of having to thaw out the ice. It's great to open a valve and let the law of gravity take its course instead of soaking burlap bags in hot water. It's great to have that old peace of mind instead of a constant dread of what might be taking place. Yes, it was time well spent for this morning it was cold, well nigh zero. But the work went just as smooth as silk.

Jan. 28 — Little warmer today. Donnie was home, so Harold and I had more time, as Donnie gathers all the eggs on Saturdays. The droppings in the first two floors of the barn were loose, but in the west house it was a different story. It was necessary to use the ice hoe first. Frozen droppings don't pack very well on the wheelbarrow, which, of course, meant more loads. By and large, it took about four times as long to do the work. But the point is that we did get that much done.

If the weather only breaks a wee bit Kid White and I are Columbus-bound about Tuesday morning. I will probably have to work until 1 or 2 o'clock at night to get all the eggs packed but that is really a very small item.

Jan. 30—Well, we came down the home stretch today. The weather broke and we cleaned boards. Not only did we clean those that hadn't been cleaned, but we also cleaned those that were cleaned Saturday, the whole works. Furthermore, all the droppings have been spread on the pasture. But the eggs are not packed and there are plenty to pack too. It will take until the wee hours of the morning to do it, but it will be done. All depends on the weather in the morning and what the radio man says it will be for the next couple of days. I am anxious to see the old crowd again — Dakan, Ferguson, Winters, Vickers and the office force. Yes, it's great to have friends, friends that are friends indeed.

Jan. 31 — Southern Hotel, Columbus, Ohio. Charlie Moser of Columbiana, Ohio, and I have just come into the hotel after a rather tiring day and night. Both of us attended a meeting at the Fort Hayes Hotel that lasted until 11:30. Then, of course, we had to step out for a bite to eat and settle all of the troubles of poultrydom. Kid White in the meantime went to see Ethel Barrymore at the theater. Yes, it has been a big day, from before sun-up until way after midnight. The weather looked right and the radio man said it would be right, so while Donnie polished up the car, Kid White and I got ready. Just threw some things in the suitcase and high-balled down the road after having the gasoline tank replenished. It's great to be in the land of the living.

IN THE postoffices in Hungary, egg prices are posted daily to protect the purchasers of eggs from unscrupulous middlemen who would overcharge them.
—Poultry Tribune, Dec. 1939.

The Fallacy of Worshiping A High Egg Record

By W. C. Goodson
Tamworth, N. H.

Condensed from the New Hampshire Breeder

THE fact that a bird has laid over 200 eggs in one year is certainly in her favor, but this fact alone means little. The record of a pullet at the end of her first laying year is not the goal. It is rather the beginning. With this information the breeder is ready to go to work.

Some Important Questions

The old gag about the chicken or the egg coming first takes on a new and serious meaning for the breeder. He has the chicken, and he has the egg; but how good is the chicken and what will become of the egg? Will the chicken live more than a year and will she continue to lay more than a year? Will the eggs hatch the first year and, what is more important, will they hatch in following years? How is a breeder to place first importance on any one of these three factors — production, hatchability and viability? One is absolutely no good without the other two.

If a pullet has these three things on the credit side of her ledger, she is a pretty good bird. If her sisters, likewise, have these three credits, she is even a little better bird. If her daughters inherit these characteristics, the breeder begins to think he has something. And if her sons throw daughters with these three things, the breeder is sure that he has a fine bird.

A good breeding hen is about like the motor of a good car. Almost any car will get you there and perhaps get you back on four out of six or eight cylinders, but you may have some misgivings before you complete your journey. Just so the hen. The three things mentioned above will take you quite a way, but to have a smoothly operating breeding program, you must rely on all cylinders.

Early maturity means more dollars for all poultrymen, and this is no accident. It is bred into chickens. So, too, is intensity, persistency, non-broodiness, absence of winter pause, large egg size, good egg quality, rapid feathering, high chick livability, etc.

And these things must show up in a majority of the birds in a family. Breeding from high-producing, high-hatching females, when they are the only ones in a family with these traits, is about like looking at a high egg record and nothing else. Little success will be attained by breeding from individuals.

It goes without saying that the bird herself must be a good bird. Here is one of the major pitfalls of trapnesting. The temptation to use an inferior bird because she has a high egg record is sometimes more than a man can stand. But what happens?

Suppose you have a pullet that produced 260 eggs. At the end of her first year she is run down; she is thin; her feathers are in poor shape; she eats but little. But she has a good egg record and birds that lay 260 eggs don't come every day in the year, so you decide to worry with her a little and bring her back.

More Eggs or More Vigor?

Perhaps you do, and perhaps she looks pretty good when the next breeding season comes along and your hopes are high. But that bird cares little what you think. She is not in top-notch shape, and after her molt, her eggs will probably be poor.

What is more, she will probably stay as far away from the male bird as she can and her eggs won't hatch. If they do, the chances are that the chicks will be inferior, but you may worry with them too because of her record and try to raise them. If you do raise a few of the pullets the chances are they haven't enough energy to carry through the breeding season and repeat their dam's performance.

When you get all done, you have wasted a year in time, a lot of money, and you have nothing to show for your efforts but a few inferior pullets and perhaps a male or two from a dam that had a high egg record and nothing else.

How much better it is to spend that time and money on some vigorous female with a lower egg yield. One of my best families comes from what might be termed an inferior dam so far as egg yield is concerned. This bird laid only 188 eggs, yet all seven of her daughters have laid more than 200 eggs each. In this case, the bird in question did not have a high egg record, but she had plenty of other things that go into a good bird. It took less time and money to carry this bird along than it would have taken to carry the 260-egg hen, and look at the difference in dollars and cents.

The trapnest is a fine thing. Record of Performance is likewise. So, too, the laying trials; but these things when properly used are only the beginning. They should select for you your best producers. Mind you, I said producers. From there on, it is up to you to select your best birds.

Garden State Publishing Co., Sea Isle City, N. J.
(New Hampshire Breeder, Dec. 1939)

Let's Have Cash and Carry

I met a fellow the other day and he told me that he was not getting any eggs now that the price was tops and he needed them. His pullets were seven months old, looked pretty good, but had been slow growers, and now they just wouldn't lay no matter how well he fed and cared for them. Then he told me the story.

Last spring he did not feel very flush at chick buying time, so started shopping. The farm where he wanted to get his chicks said, sorry, but we have to get cash. Our business is not large enough to let us take any chance on getting the money before the grain man jumps on our neck. At another place results were better. The owner told him that he was always glad to help a friend, he would do anything for him even to letting him have all the chicks he wanted and he could pay for them whenever he wanted to. That's certainly bearing gifts. He got the chicks.

These won't-lay pullets are the results. No one with good chicks has to sell them on time.

I talked with a grain man last summer who comes from the big broiler region. He told me that his firm would buy chicks for any one who had a brooder house and stove, would furnish the feed for them up to 12 weeks and then sell the broilers. He said, "If there is any profit we divide it with the grower. Of course if he hadn't made anything over the cost, we take it all." He added that they watched the man and his chicks pretty close and seldom lost anything, but the man who did the work often lost his time and labor. Perhaps, not what you could call a really free hearted gift.

—Eben Wood, New England Poultryman, Nov. 15, 1939.

Turkey All the Time

Jim Louie has changed turkey time from the holiday season to 52 weeks in the year in Portland, Oregon, declares Frank J. Taylor in the December 23, 1939, issue of Collier's.

This round, pink-cheeked, bright-eyed Chinaman has cooked his fifty thousandth turkey. For 40 years, day in, day out except Sundays, he's turned from one to ten birds to a brown, not counting several thousand geese, ducks, wild fowl and Virginia hams.

Gives Rules for Roasting

The Number One Trick in turkey roasting, Louie claims, is to start with an A-1 bird. That's a young tom with lots of firm flesh on the breast and plump drumsticks. And one that's killed in October, November or December. Every fall, Jim Louie personally inspects, buys and places in cold storage at least 1,000 young toms weighing from 20 to 25 pounds each.

"Don't buy cheap birds," he insists.

Number Two Trick is the dressing with which Jim Louie stuffs his birds. It explains why there's never turkey hash at his place.

"You take a lot of small pieces of turkey meat and a little ham. Take some oysters, chestnuts, celery, bread crumbs. Grind 'em up with sage and spices, in a meat grinder. You gotta good stuffing then."

Then comes the Main Trick, cooking for two hours.

"You start him in a very hot oven half an hour," continues the turkey cook. "Then slow the heat down. Baste him every few minutes with the gravy until he's done. You have to watch him all the time. Never leave him alone or he'll burn. The color comes from his own juice."

Jim Louie's turkeys emerge from the oven a deep nut-brown. The flesh slices without falling apart and is as juicy as a steak.

It's the same with a goose or a duck. Jim Louie treats them just like his turkeys, except that a goose cooks more slowly and a duck more quickly, especially tame ducklings. Sometimes they're done to the same golden brown in half an hour. Wild fowl cook longer.

It's a simple matter to acquire a reputation for turkey cooking, according to Jim Louie:

"A young fellow, he cook 100 turkey, and know nothing. He cook 1,000 turkey, and know not very much. Cook 10,000 turkey, he know a little bit. Cook 50,000 turkey, he know something about it."

A BARRED ROCK hen owned by Mrs. Thelma Brockman, sister of a University of Michigan athletic trainer, recently laid two eggs shaped like a football, brown in color, and showing the seams in the shell, according to the Michigan Farmer.

THE CITY of Valleyfield, Province of Quebec, Canada, has passed a by-law which permits the sale of Grade A eggs only on the public market, all other grades being forbidden, and a penalty of $40 has been set for violation of this law, according to the Canadian Poultry Review.

BEFORE leaving for a shopping spree, Mrs. Albrecht, Washington, N. J., opened the door of her kitchen range, Returning, later, she found a live gobbler (which had escaped from her cellar) comfortably basking in the warm oven. Mrs. Albrecht figures he was rehearsing.

—Turkey World, November, 1939.

Lowering Turkey Feeding Costs

By Paul Cunyus

Condensed from a Talk

IT is well known that feed costs alone constitute over one-half of all turkey raising costs, yet there is that other strange factor of quality which makes us revise our thinking. What do we mean by saying "lowers feed costs?" Does it mean, for instance, a smaller feed bill than last year? Or does it mean more return for the same money, or even more money, spent for feed? Our definition would be: lower feed cost per dollar gross return.

I will illustrate the point by quoting figures on two flocks raised in 1938 by two neighbors who marketed the same day at the same place in Plainview, Texas. The figures by "Smith" are fairly accurate because he kept a record, but the "Jones" figures on costs are estimates. All the "returns" figures are exact almost to the penny.

Comparison of Costs and Net Returns

Costs	SMITH	JONES
Poults @ 35¢ each	$ .35	$ .35
Brooding costs, except labor	.25	.15
Feed costs (Exact for Smith, est. on Jones)	1.65	1.00
Miscellaneous costs, estimated	.25	.15
Total costs	$2.50	$1.65
Returns		
Toms (Smith) average weight 22.5 pound dressed @ 20¢ per pound, all graded prime	$4.50	——
Toms (Jones) average weight 12.5 pound dressed @ 17¢ per pound, all graded choice	——	$2.12
Net Returns		
Excluding labor costs	$2.00	$ .47

Now, who had the lowest feed cost? Obviously, many comparisons can be made. Of course, management enters in; so do mortality and other factors not considered in this table which would make the "Jones" cost still higher.

So, our problem is how to utilize feed most efficiently to secure the greatest net returns, as well as how to reduce the actual cost of the feed itself per pound.

Good Range Lowers Cost

Raising feed at home and letting the turkeys gather it have been the two most effective ways of reducing dollar cost on the sideline producer's farm. This may vary from growing green feed only (alfalfa, wheat, sudan grass, etc.) to producing all of the grain and supplements such as milk, peas, or soybeans.

Wouldn't some of you commercial growers like to have the four sections (2500 acres) of wheat stubble and 300 acres of cowpeas on which to graze your flock which Mr. Roberts had last year in the Texas Panhandle? This was one of the reason's why he grew 2500 turkeys with little expense even though he fed them all they would eat of a balanced mash and grain ration. When the range was cleaned up, he penned and force-fed them for finish.

For the small flock owner who has no free range, maybe the method used by Peter Barbian, Kross, Texas, will work. He grew the Grand Champion bird of the 1938 Southwestern Dressed Turkey Show in competition with some of the finest northwestern birds, and he did it on a dry lot!

His 185-bird flock never left a bare quarter-acre enclosure, yet his feed bill was less than $2.00 per bird for toms that averaged over 30 pounds each at six months old.

All feed used was charged out at its market value, but the reason is that he grew the grain and produced the milk on his farm which formed the basis for efficient use of the commercial supplement purchased. During the fall finishing period, he used liberal amounts of condensed buttermilk made by the same local creamery that purchased his milk. By close attention to details, he cut the actual as well as the relative feed cost.

Vitamin A Essential

Plenty of vitamin A is essential for proper utilization of other feeds.

Average Measurements of Breast Cross-Section of First Ten Birds in Class at Southwestern Dressed Turkey Show

Year	Young Toms	Young Hens	Old Toms	Old Hens	Box of Young Toms	Box of Young Hens
1938	16.5	16.4	13.5	14.9	16.6	14.0
1937	13.5	14.2	12.2	14.1	13.3	12.5
Gain	3.0	2.2	1.3	0.8	3.3	1.3
Grand Champion 1938 (Largest cross-section in the show)						19.3
Grand Champion 1937 (Largest cross-section in the show)						15.5
					Difference	3.8

OBSERVATIONS

1. All young hens that placed in the 1938 show exceeded the 1937 Grand Champion except tenth place. The ten-hen average was about 1 square inch greater than last year's champion.

2. All young toms that placed in the 1938 show exceeded the 1937 Grand Champion except four. The ten toms' average was about 1 square inch greater than last year's champion.

3. The 1937 Grand Champion was exceeded by at least one bird in every class in 1938.

4. The 1938 Champion was a young tom with a calculated breast of 164 cubic inches. The 1937 Champion was an old hen with a calculated breast of 101 cubic inches, making a difference of 63 cubic inches.

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, July 31, 1939

We have figured out or concocted many substitutes, yet we have never found one equal to young tender green feed. Unfortunately for most of us, nature usually requires some effort to help out native pasture by growing special crops such as alfalfa, sudan grass, small grains, or leafy vegetables. Here again, it is cheaper to let the turkeys do the harvesting if possible.

Plenty of Feed Needed

We would scarcely disagree about the necessity of providing plenty of feed. Certainly no commercial turkey grower believes a profit can be starved into a bird, yet you might be surprised to know how many sideline producers believe that subconsciously and practice it unconsciously. This is particularly true of the cheapest of all feeds—water and green feed. Both are supplied free by nature in many cases, or at least just enough to spoil us and make us forget to prepare for the time when nature can't do it for us.

Mortality Affects Costs

Good feed without management is wasted, and among these management factors I would list first of all, planning and preparing ahead. This involves, besides providing for feed supplies, proper precautions against disease. Nothing can increase feed cost faster than sudden death, especially when birds are half grown.

To avoid filthy ground, we use for young poults either screen wire sun porches or a weekly rotation of yards; while for growing stock frequent changes in location of roosts and feeding headquarters are effective and practical methods.

The Breeding Stock

Closely related to the mortality problem and apparently directly correlated with lower feed cost per pound of product, is the quality of breeding stock used. We have had an excellent opportunity to observe this by direct comparison in the areas around Mangum, Oklahoma, and San Angelo, Brady, Gonzales, Plainview, and Ballinger, Texas, where importations within recent years of the so-called "Baby Beef" type of turkey have increased both average weight and quality. A convenient yardstick has been furnished by the five annual Southwestern Dressed Turkey Shows held at Plainview, Texas, since 1934.

The first three shows consisted of southwestern native birds only and showed very little progress, while in the 1937 show, all birds except the grand champion were also native stock. The influence of that one outstanding individual from the state of Washington resulted in the importations mentioned and the progress shown in 1938 by this chart.

To avoid comparisons by opinion only as to the progress made from year to year at the show, certain measurements were made on the prize winning birds. Soft 14-guage pure copper wire was used to get the exact shape of the breast cross-section 1-inch from the front of the breast bone. This was drawn on paper and a 4-inch deep cross-section was measured with a planimeter showing the square inches of area.

The figures given in the table represent square inches determined in this manner. The length and shape of the breast bone were determined likewise. The table reveals with mathematical accuracy the progress made in a single year by the introduction of superior breeding stock bred for the specific purpose of producing meat. All prize winning birds among the 600 or more entered were of this stock.

Test for Bronchitis

So you're afraid your chicks have bronchitis! Here's a test:

Raise one wing of an ailing bird and put an ear to its chest. If you hear a noise like a girl going down the street in a silk skirt—that's chick bronchitis.

Dr. Cliff Carpenter, Fort Wayne, Indiana, gave that formula to 300 members of the Iowa Poultry Improvement Association who met recently in annual session at Des Moines.

Warning that chick bronchitis is spreading rapidly through the Middlewest, Dr. Carpenter advised hatchers and breeders to keep visitors from handling day-old chicks. He also urged segregation of sick chicks, feeding of wet mashes and fumigation of places where infected birds have been kept. The virus causing the disease will live for months, he said.

—Farm Journal, Dec. 1939.

CHARGED with maintaining a public nuisance, to wit: "One large rooster that crowed at all hours of the day and night," Charles Buckridge of Brooklyn, N. Y., received a suspended sentence from Magistrate De Andrea in Flatbush court recently, after he promised to deport the bird to rural surroundings.

Magistrate De Andrea suggested that with Thanksgiving approaching, the problem might be solved if the bird provided the Buckridge holiday dinner.

"No, judge," Buckridge said. "That rooster is my granddaughter's pet. I couldn't think of killing it. But if you'll give me a little time, I'll send it away to the country." —Newspaper Article.

Using Eggs and Poultry in the Food Manufacturer's Kitchen

By Marie Sellers

Director, Consumer Service, General Foods

Condensed from a Talk

IN early days, the cook-book was addressed to the few. Significant, indeed, is the title of America's first cook-book. It was published in Virginia in 1742—George Washington was just 10 years old then—and it was called "The Compleat Housewife or Accomplished Gentlewoman's Companion." Gentlewoman! Mark that word. Not just for the average woman, Goody Smith, wondering how she could make something new and tasty for her family at the lowest possible cost—no, this treatise was not for her.

The same criticism may be applied to cook books from the Civil War period through the Gay Nineties. Always their authors assumed that you had the means to use all the eggs and butter and cream which their recipes demanded. The effect of this was discouraging to the little woman, pinching along, trying to decide whether to stop Mary's music lessons or buy a new rug for the front parlor. So she said to herself:

"Ten eggs for that cake! Well, we'll just have to go without cake."

It is at this point that the experimental kitchen has turned into a real partner of the poultry and dairy industries. It has said to that average woman who once felt she couldn't afford cake:

> "Yes, we have recipes for more expensive cakes. There's angel food cake, of course, or white pound cake, that take eight to twelve egg whites. Or Sunshine Cake with six egg whites and four egg yolks. But if you can't afford those—well, you can make a cake with one or two eggs, and, what's more, it will be delicious."

Millions of women all over the country now try those one and two egg cakes. To you, the poultry industry—what does this mean? Simply that you've sold one or two million eggs which, only a few years ago, would never have been marketed at all. For these purchases were made by the very woman who once said, "I simply can't afford cake."

More Than 100 Test Kitchens

At present there exist in the United States more than 100 experimental kitchens serving business and the consumer. They are dotted all over the country. They have even turned mountain climbers. For it must be remembered that cooking directions in higher altitudes require some adjustments, and you just can't give the woman in Denver, Colorado, the same recipes for making Chocolate Fudge Cake as you give the woman in the Corn Belt.

Enter any of these testing kitchens and you will think that the World of Tomorrow is—today. What could possibly go further than these immaculate settings? Here are refrigerators of all types, ranges of the most modern inspiration, the electric garbage disposal sink which grinds even chicken bones to nothing. As for all the closets,—yes, they have a skeleton in them. In these modern closets every inch of space is utilized. You open the door of one of them and there is your container of flour attached to it. You look through the glass doors of another and see that the small containers are all placed on terraced levels doing away with fumbling for this or that.

There is always the buzz of activity, the fragrance of percolating coffee, of cake in the oven, of meats or chicken simmering in savory sauces. Women in smart white uniforms move about directing these exciting events. They are graduates of home economics from large and small colleges, universities, and agricultural schools. They know cooking from every angle. They have studied marketing, budgeting, and nutrition. They are familiar with chemistry, of course. In fact, they are qualified to conduct the experiments necessary for a perfect recipe.

It is not possible here to cover all the various uses of eggs and poultry in the manufacturer's kitchens, so, to save time, I have selected from the calendar an actual week in May showing some of the testing done in our own General Foods Consumer Kitchens.

Monday: A test on Minute Tapioca Cream for new variations for a series of magazine advertisements. This test required three times the recipe and called for six eggs.

A series of Angel Food Cakes to compare the results of different methods of making and baking. Six cakes in this series, made by one home economist, used 60 egg whites. Then, two other home economists made check tests. Each made three Angel Foods, the first checking on one variable, and the second checking still another variable. These took 60 more egg whites.

Another test on that day's schedule was on miscellaneous consumer recipes, among which was a Corn Pudding and a Spinach Mold. Together, these called for six eggs.

When we run tests on Angel Food Cakes, we try to schedule other recipes which will use up as many egg yolks as possible.

There is a molded Jell-O Salad on the schedule, too. It calls for slices of hard cooked eggs molded in with vegetables in a decorative design.

Tuesday: Two more Angel Food Cakes are on the schedule, but this time, they are made to try out a new dessert idea brought back by one of our staff members

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 5, 1939

from the Pacific Coast. The Angel Food is made up to use as a dessert, divided horizontally in half and filled with different fruits as a shortcake.

Wednesday: One of the home economists who prepares the dishes for our food photography is working on some new frostings for cakes to be used in a new issue of Cake Secrets.

Another member of the staff is making Golden Cream Chocolate Cake for Kate Smith to see that afternoon as a possibility for featuring in one of her radio programs. The receipts for the new frosting and the cake call for eight eggs.

The schedule also shows that this same worker had made up a consumer suggestion for an ice box cooky, wrapped it up, and put it in the refrigerator for later use. Three eggs helped make that mixture.

Thursday: More cakes are being made for photography. And there is a demonstration of quick-frozen Birds Eye Chicken.

Additional Angel Food Cakes are being made as a part of the series of tests started Monday by different technicians to determine if the conclusion drawn early in the week would still hold with the individual technics of different operators.

Friday: The schedule shows a butter cake being prepared for a Fourth of July picture and special frosting decorations for that occasion.

Another home economist is working with Minute Tapioca Cream in some baked variations to be used in the same series of advertisements referred to earlier in the week.

And again, two of the workers make Angel Food Cakes to repeat their tests made earlier in the week.

At a coffee test on this particular day, a recipe for "boiled" coffee was checked and some egg was used to clear it.

A week of tests involving so much Angel Food work of course runs into dozens of eggs; in fact, one week when Mrs. Kathryn Niles of the Poultry Institute was co-operating with us on some special work, we used 22 dozen eggs in two days.

During this same week one of our home economists was in Denver, Colorado, developing special cake recipes for use at high altitudes. Over a period of six weeks that followed, she used on the average of 12 dozen eggs a day. Much of her work was on Angel Foods, Sponge Cakes, as well as Butter Cakes.

Why Test Kitchens

Now, why do the producers of flour and baking powder, of chocolate and coffee go to such pains and expense to maintain experimental kitchens? This careful work represents an honest effort on the part of business to enable the consumer to get the very best in value and in use from each product which she buys. For we food producers can not do as the manufacturer of an automobile does. We can't say, "Here's the product, it's up to you to learn to run it." We assume the responsibility of teaching the consumer how to operate our products, and it's not our fault if she doesn't get her flour or baking powder "license." Furthermore, if a recipe develops strange behavior, we're here to tell the consumer what's wrong with the mechanism, . . . Why do my cakes sometimes fall? How can I make my biscuits flakier? . . . We're always standing by to tell the answer.

Food Companies Advertise Eggs

Manufacturers' experimental kitchens all have loud speakers attached —and what loud speakers! Through magazines, newspapers, radio, and special recipe booklets and cook books, we bring our products to millions of women. But these loud speakers which are attached to experimental kitchens don't just selfishly promote the manufacturers' own products. They promote yours, too.

This is the way it works: Swans Down spends annually several hundred thousand dollars in advertising. And every cake recipe we give calls for from one to a dozen eggs. The average is four. Millions of our recipe books are distributed every year. "Latest Cake Secrets" is now in its 37th edition, and this book alone contains 53 recipes for cake—in other words, 53 shouts of "Buy eggs!"

Kate Smith Promotes Eggs

And we sell eggs on the radio, too. Have you any idea how many eggs Kate Smith recommended to her audience during her past radio season? Every week, for 39 weeks, she featured a cake recipe. Multiply the number of eggs called for in each recipe by the number of homes — number of radio sets, not even total listeners—tuned in to each program, and you get something that sounds like the distance to Mars: 520,000,000 eggs "sales-promoted" by Kate Smith for the poultry industry and, for our products.

And, in addition, 800,000 women have bought the new book, Kate Smith's Favorite Recipes, which she offered to her listeners. This book has 147 grand recipes — layer cakes, sponge cakes, tea cakes, coffee cakes —biscuits, muffins, brownies, cookies —frostings, fillings, most of which call for from 1 to 12 eggs.

The experimental kitchen is a partner of the poultry industry. It's no silent partner. For never forget that this flood of sales promotion for our products released by magazine, radio, newspapers, and literature helps take you along with it.

BIRDS at the National Trials at Milford, England, are having 10 to 12 per cent of pulped cabbages and carrots included in their rations.
—Poultry World, London, England, Dec. 15, 1939.

ELECTRICITY supplies to Essex, England, farms have been interrupted as the result of damage to the main cables caused by the trailing wire of an escaped barrage balloon. One hatcheryman reported he had two interruptions of 16 and 18 hours, but, fortunately, chicks were not hatching at the time, and no ill effects were noted.
—Poultry World, London, England, Dec. 15, 1939.

VIEWS OF THE EDITORS

Buy Good Baby Chicks

We are constantly hearing stories about poor luck with the layers. Much of this is blamed on the quality of baby chicks received last year.

Cheap chicks can be nothing but expensive in the long run. Figure out for yourself how many extra eggs you have to get from a good pullet next fall to pay for the increased cost of the baby chick. With eggs at 30 cents, 4 extra eggs from a pullet will mean that you can afford to pay as much as 10 cents more for the chick. If you figure the pullet has to pay for the increased cost of the cockerel, it is still 5 cents per chick more.

If the better grade of chicks sold by hatcherymen will not lay 4 more eggs than the low priced chick, then there is something wrong somewhere. "The best costs less" is certainly true when applied to the purchase of chicks.

—Health-Ray Egg News, Published by the Poultry Producers Assn., Versailles, Ohio

Are You Staying in the Poultry Business?

The answer to this question is very vital to the poultrymen who are cancelling their chick orders. A poultryman must replace his flock each year if he intends to stay in the business. The merchant who sells the stock on his shelves but does not replace that with new supplies is soon out of business.

Any business has its ups and downs and the decision as to the profitableness of that business can not be made on a single poor year any more than on a single good year. We have been in the commercial poultry business for 25 years and have seen some mighty profitable years along with some exceedingly unprofitable ones. There was one year in which if we had sold all the hens at the beginning of the year and played checkers for the year, we would have been money ahead. Taking the good with the lean over that 25 years, however, the poultry business has been better than the average of our agricultural industries. It is more subject to fluctuations since it is so easy to get into and out of. The year 1938 was a profitable year; 1939 is not going to be as profitable, but will be fair, and 1940 you might as well make up your minds will be a year in which you must be as efficient as possible to come out on top.

There is always a good living in the poultry business for the man who will buy good stock, take care of it as well as he knows how, treating his flock as an investment in future profits and then produce his eggs as efficiently as he can, buying good feed but not cheap feed, culling much closer than he has been accustomed to, and watching every little factor where he may increase his efficiency.

—Chicken Chatter, Published by Hogsett Poultry Ranch, Pomona, Calif.

Cooperation Can Do It at Little Cost

Will poultrymen be willing to contribute 3 cents per year per 100 laying hens? That is the question that was asked by the national committee of 20 that met recently in Baltimore. At the industry mass meeting held near the close of the Poultry Congress at Cleveland, it was voted to enlarge the Executive Committee of the Congress to 20 members and have it take over the job of planning and developing a consumer education campaign.

The poultry industry wants the American people to eat more eggs and poultry. Eggs are a protective food that supplies the deficiencies of other foods. We can all afford to eat more of them for our health's sake.

The turkey is not only a holiday bird — it is delicious eating at any time. Chickens are just as fine eating on week-days as on Sunday. And poultry meat is economical, too, at present prices. So are eggs.

If everyone in the U. S. ate only 10 eggs more per year, it would boost consumption well over 3,000,000 cases annually. And then think how much it would add to the delightful variety of our meals if we all ate a few more pounds of chicken and turkey. Roast chicken and turkey, chicken fricassee and hot biscuits, fryers done to a turn, turkey sandwiches—umm! umm!

—Nulaid News, Dec. 1939.

AFTER returning home from his first night's work as a special officer patrolling roads in Hanover County, Va., to curb activities of poultry thieves, Robert Jeter found that thieves had stolen 34 chickens and turkeys from him.

A DOUBLE-YOLKED egg laid in the flock of Mrs. Rudolph Knittel, Youngstown, Ohio, exceeded in size that reported in the November DIGEST. Measurements: 8½ inches in circumference the long way; 6¾ inches the short way.

A. J. GRANT of Grant's Poultry Farm (N. H.) while culling his flock recently, found a bird with two perfect vents, both in operation, with the bird in production. The vents are side by side at the end of each pelvic bone. They were both free of pigmentation and otherwise indicating that eggs had been laid from both exits. It will be interesting to see whether she has two ovaries and oviducts.

—Poultry Item, Jan. 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens Per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
						Aggregate			Aggregate
	Jan. 1	Nov. 1	Dec. 1	Nov. 1	Dec. 1	Jan.-Dec.	Nov. 1	Dec. 1	Jan.-Dec.
North Atl.									
1928-37 (Av.)	96.9	87.3	92.9	19.5	20.6	464	16.8	19.1	393
1938	96.7	88.7	96.3	26.8	27.5	516	23.8	26.6	443
1939	98.4	88.5	93.0	27.2	28.2	520	24.0	26.2	436
North Cent.									
1928-37 (Av.)	115.7	96.6	107.1	16.0	12.7	398	15.6	13.9	397
1938	102.4	93.4	102.4	20.4	17.8	452	19.4	18.9	408
1939	110.4	98.4	109.7	19.8	20.3	450	19.8	23.0	433
South Atl.									
1928-37 (Av.)	60.1	52.9	56.2	19.9	18.2	408	10.6	10.2	212
1938	55.8	53.3	56.0	23.9	23.3	454	12.7	13.1	226
1939	59.9	54.8	56.6	24.8	23.8	456	13.7	13.6	232
South Cent.									
1928-37 (Av.)	66.8	57.9	61.2	19.9	15.8	389	11.6	9.8	222
1938	59.3	57.5	60.6	22.8	19.2	435	13.2	11.9	232
1939	63.6	59.3	62.8	21.6	18.6	425	13.0	11.9	240
Western									
1928-37 (Av.)	74.0	66.6	70.8	22.2	18.8	470	14.4	12.8	307
1938	71.1	67.3	71.1	25.5	21.1	492	16.9	14.4	316
1939	72.6	67.5	70.2	26.5	24.2	496	17.0	16.0	314
United States									
1928-37 (Av.)	86.0	73.8	79.8	18.1	15.2	411	13.5	12.3	302
1938	77.6	72.5	78.0	22.3	19.9	459	16.3	15.9	315
1939	82.8	75.1	81.2	22.0	21.5	458	16.6	17.5	327

A record high egg production both in total volume and per hen is shown by the December poultry and egg production report of the United States Agricultural Marketing Service.

The average size of farm laying flocks on December 1 remained as in recent months about 4 per cent greater than a year ago, and was about 2 per cent above the 10-year (1928-37) average for December. Although numbers were 7 per cent below the record high December level of 1927, they were the highest since 1930.

The seasonal increase in numbers of layers since the low point on August 1 has been 32 per cent, about the same increase as was reported last year. This is considerably greater than the 10-year average seasonal increase of 24 per cent, as is to be expected in a year such as this, when numbers are increasing. A greater increase was possible from the increased supply of pullets available, but the less favorable feed-egg price relationship during the summer and autumn resulted in closer culling which held flock increases within moderate limits.

In contrast with the increase in size of laying flocks for the country as a whole, the two most intensive commercial areas, the North Atlantic and Far Western, show flocks smaller than last year by from 1 to 3 per cent. In the North Atlantic area, flocks are still slightly larger than the 10-year average size for December, but are 3 per cent smaller than last year and 6 per cent below their record high level touched in 1936. In the Far West, flock size is 1 per cent lower than last year, slightly below the 10-year average and it is about 8 per cent below its highest level, which was reached in 1927. In the North Central States flock size is well above that shown last year. In the eastern portion of this area it is about 2 per cent above all past records for December while in the western portion it is still short about 11 per cent of the 1930 peak. In the South numbers are about 3 per cent greater than last year, although about 14 per cent below the record high level in 1927.

More eggs were laid per hundred layers on December 1 than on that date in any past year. The average rate was 21.5 eggs compared with last year's December figure of 19.9 eggs. The rate in 1937 was 18.6 eggs and in 1936 it was 16.0 eggs. The 10-year (1928-37) average for December is 15.2 eggs per 100 layers.

The exceptionally favorable weather of late November was no doubt a factor contributing to the record high rate of December 1 egg production in addition to the gradual improvement in the laying capacity of the average hen and in the methods of handling and feeding laying flocks. Also, the exceptionally large proportion of pullets on hand this fall, without any material gain in total layers, makes it probable that the laying flocks now contain a higher proportion of pullets than last year.

The cumulative total of eggs laid per 100 layers for the first day of each month, January to December inclusive, was practically the same as last year. The high rate in these two years has exceeded all records, being about 4 per cent higher than the nearest approach in 1937 and 8 per cent higher than the next highest in 1931. It exceeded by almost 12 per cent the 10-year average for these 12 daily layings.

The total indicated production of eggs for December 1 this year, judging from average production per farm flock, is about 10 per cent above December 1 production in 1938 and about 24 per cent above that of 1937. Production exceeds the December 1 total in all other years by a wide margin, and is 42 per cent above the 10-year (1928-37) average. Only in the North Atlantic and South Central Divisions did production fail to exceed last year's December record, being the same in the South Central and only 1 per cent less in the North Atlantic.

Total production of eggs for the year appears likely to exceed that of 1938 by about 4 per cent, which is substantially the increase over last year in the average monthly number of layers on hand.

The number of pullets not yet of laying age, still remaining on hand available for later addition to the laying flock, averages 22.1 per farm. This number compares with an average of 21.7 pullets on hand on December 1 last year and with 19.8 in 1937. The North Atlantic States show the greatest gain over last year in young pullets on hand, the increase being particularly noticeable in New England. Elsewhere the difference is small.

—Comment from Poultry and Egg Production Report.

Egg Prices

Heavy supplies of fresh eggs and relatively large storage reserves were depressing influences on egg markets during December. The weakness was most pronounced early in the month and prices declined sharply. The more or less demoralized egg price situation brought the Federal Surplus Commodities Corporation into the market toward the middle of the month. It was the buying by that agency which apparently checked

1939 Egg Prices at New York City

Kind	Dec. 1	Dec. 8	Dec. 15	Dec. 22	Dec. 29	Dec. 29, '38
Mixed Color Firsts	23	21½	20½	20¼	20	26
Nearby and Midwestern White Premium Marks	25½-27	25-26½	26½-28	25¼-26¾	23¾-25¼	35-36
Nearby and Midwestern White Specials	25	24-24½	26	24½-24¾	23-23¾	34
Pacific Coast Specials	27-29	25¼-27	27-28¾	26½-27	25¾-26½	36½-37
Nearby and Western Brown Exchange Specials	25½	24	25	24	23-23¼	31

Farm Prices of Eggs per Dozen

(Figures given in cents)

Year	Jan. 15	Feb. 15	Mar. 15	May 15	July 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
Average 1928-37	25.9	21.6	18.0	17.5	18.7	23.9	27.0	31.1	30.3
1938	21.6	16.4	16.2	17.6	19.9	24.9	27.1	29.0	27.9
1939	18.8	16.7	16.0	15.2	16.5	20.6	22.9	25.8	20.5

further price declines. The Federal Surplus Commodities Corporation operation was inaugurated under the price stabilization authorization of the Department, and all eggs purchased were turned over to relief agencies for distribution. Under the recent authorization, approximately 11,000 cases have been purchased up to December 28 at New York and Chicago. This operation is similar to the one developed earlier this year, at which time, approximately 253,000 cases were taken from the market.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs and Poultry

Receipts of Eggs (cases) at 4 Markets*

Geographic sections	November 1939	November 1938	% change	Jan. to Nov., Inc. 1939	Jan. to Nov., Inc. 1938	% change
New England	25,174	25,967	– 3.1	342,510	269,824	+ 26.9
Middle Atlantic	108,333	107,271	+ 1.0	1,810,707	1,523,332	+ 18.9
South Atlantic	8,525	10,719	– 20.5	255,878	241,578	+ 5.9
East North Central	121,247	130,151	– 6.8	2,585,583	2,501,744	+ 3.4
West North Central	129,914	160,981	– 19.3	7,161,760	6,308,432	+ 13.5
South Central	81	1,923	– 95.8	55,456	98,993	– 44.0
Mountain	37,305	22,131	+ 68.6	280,636	416,825	– 32.6
Pacific	117,341	53,680	+118.6	486,205	653,883	– 25.6
Miscellaneous	264	246	+ 7.3	4,764	4,848	– 1.7
TOTAL	548,184	513,069	+ 6.8	12,983,499	12,018,959	+ 8.0

Receipts of Dressed Poultry (pounds) at 4 Markets*

New England	1,269,742	1,063,877	+ 19.4	12,854,138	11,124,291	+ 15.6
Middle Atlantic	1,641,109	1,714,695	– 4.3	37,186,671	34,093,028	+ 9.1
South Atlantic	1,807,564	922,152	+ 96.0	16,758,942	6,906,376	+142.7
East North Central	6,109,808	6,436,444	– 5.1	38,041,441	29,659,001	+ 28.3
West North Central	54,815,005	46,869,590	+ 17.0	176,336,854	150,984,712	+ 16.8
South Central	7,881,311	10,327,559	– 23.7	22,834,050	27,363,559	– 16.6
Mountain	3,714,017	2,167,025	+ 71.4	6,815,318	4,884,373	+ 39.5
Pacific	1,414,173	1,994,207	– 29.1	7,939,076	9,786,354	– 18.9
Miscellaneous	–	–	–	58,117	–	0
TOTAL	78,652,729	71,495,549	+ 10.0	318,824,607	274,801,694	+ 16.0

* New York, Chicago, Philadelphia, and Boston.

Terminal market receipts of eggs have been unusually heavy during recent weeks. The volume of arrivals at New York, Chicago, Philadelphia, and Boston during the first 3 weeks of December was not only greater than during the entire month of November, but was 13 per cent greater than the corresponding period of last year. Shipments from the Pacific Coast have been exceptionally heavy since September. November receipts at the above four markets, totaling 548,000 cases, included 117,000 cases which originated in the States of California, Oregon, and Washington, with an additional 37,000 cases from Utah. Compared with 1938, the November increase from these western producing areas was more than 100 per cent. Pacific Coast packing plants continued to receive greater quantities of eggs during December than a year earlier, although the increases over 1938 were not so large as those of the previous month. Terminal market receipts from the Central West were lighter during November than last year, as also were receipts at packing plants in this area most of the month. Reports for the last week of November, and the first two weeks of December, show that Central West packing plants received approximately 35 per cent more eggs than during the corresponding period of last year. Furthermore, there were heavy weekly increases, the last available reports showing a volume double that of a month earlier. These increases account in part for the heavy terminal market receipts since December 1.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
December 2	28	30,525	+10.30	+12.41
December 9	28	32,559	+ 9.32	+30.76
December 16	23	30,845	+ 5.18	+33.01
December 23	19	24,675	+ 4.34	+26.45
December 30	21	26,278	– 3.00	+23.10

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	Cases of Eggs 1939	Cases of Eggs 1938	% Change from Previous Week	% Change from Last Year
December 2	61	58,034	48,686	+3.65	+19.20
December 9	62	57,874	51,861	–0.63	+11.59
December 16	61	58,899	52,234	+2.20	+12.76
December 23	61	59,381	53,000	–0.82	+12.04
December 30	61	60,532	53,792	+1.94	+12.53

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1939	Cases of Eggs 1938	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) 1938	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) 1938	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) 1938	Pounds of Fowl (000 omitted) % Chg.
Dec. 2	21,269	17,336	+22.69	5,508	5,754	– 4.28	3,008	3,279	– 8.26	2,415	2,392	+ 0.95
Dec. 9	26,556	19,104	+39.01	4,645	5,845	–20.53	2,305	3,108	–25.84	2,243	2,633	–14.79
Dec. 16	27,026	23,991	+12.65	4,949	5,740	–13.77	2,516	2,917	–13.75	2,341	2,718	–13.88
Dec. 23	36,431	31,573	+15.39	4,935	5,065	– 2.55	2,369	2,299	+ 3.01	2,461	2,650	– 7.12
Dec. 30	34,579	34,213	+ 1.07	2,511	2,615	– 3.94	1,038	954	+ 8.83	1,408	1,589	–11.36

Poultry Meat Prices

Farm Prices of Chickens per Pound

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	July 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
			(Figures given in cents)						
Average 1928-37	15.1	15.4	15.7	16.4	15.8	16.0	15.4	14.9	14.4
1938	16.7	16.0	15.9	16.2	15.0	14.3	13.6	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.7	13.6	12.7	12.4	11.7

Farm Turkey Prices

Farm Prices of Turkeys per Pound

Year	Oct. 15	Nov. 15	Dec. 15	Jan. 15
		(Figures given in cents)		
Average 1928-37	17.9	18.9	18.5	18.1
1938-39	16.5	17.1	18.4	18.3
1939-40	15.3	16.0	15.6	

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1939	1938	1937	1939	1938	1937	1939	1938	1937
December 7	8.2	4.7	6.7	.232	.338	.265	1.96	1.60	1.78
December 14	9.0	4.8	6.1	.218	.340	.296	1.96	1.63	1.80
December 21	9.0	4.9	5.9	.225	.333	.306	2.02	1.63	1.82
December 28	8.9	5.1	6.2	.226	.324	.293	2.02	1.64	1.82

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1939	1938	10-Yr. Av. 1929-38	1939	1938	1939	1938
December 2	5.68	3.56	4.04	.206	.275	1.175	.978
December 9	6.23	3.86	4.28	.195	.262	1.214	1.014
December 16	6.63	4.01	4.50	.185	.259	1.229	1.039
December 23	6.62	4.36	4.61	.190	.238	1.257	1.038
December 30	6.62	4.31	4.55	.190	.245	1.257	1.066

Central California Egg-Feed Ratio

	Dozens of Eggs Reqnired to Buy 100 lbs. of Laying Ration					
Period	1939	1938	1937	1936	1935	1934
November	6.03	4.20	5.11	5.57	4.98	5.61
January-November	7.08	6.70	8.47	7.09	6.52	8.08
Year		6.50	8.27	7.07	6.41	7.92

—Data compiled by Edwin C. Voorhies, University of California.

Eggs in Storage

Storage Holdings of Eggs

Kind	Dec. 1 5-Year Avg. 1934-38	Dec.1 1938	Nov. 1 1939	Dec. 1 1939	% Change Dec. '38-Dec. '39
Shell Eggs (cases)	2,197	1,439	3,519	1,580	+ 9.7
Frozen Eggs (lbs.)	84,087	78,091	104,282	87,789	+12.4
Frozen Case Equivalent (cases)*	2,402	2,231	2,979	2,508	+12.4
Total (cases)	4,599	3,670	6,498	4,088	+11.3

* Frozen eggs are converted on the basis of 35 lbs. to the case.

The storage situation is more or less unsettled even though a fairly active out-of-storage movement reduced storage stocks of eggs to an amount which is relatively not large. January 1 figures are not yet available, but weekly reports indicate that the December reduction may exceed a million cases. In December last year, the reduction was 1,137,000 cases, and the 1934-38 average reduction was 1,518,000 cases. It appears that total stocks on January 1, 1940 will be somewhere between the 302,000 cases reported for January 1, 1939, and the five-year average of 679,000 cases. In terms of volume, present stocks would not be so burdensome, were it not for the fact that supplies from current production are heavy. The rate of movement from storage will slow up considerably from now on to the close of the season, because fresh egg prices are at a level which retard the sale of storage eggs on a profitable basis.

—Comment from Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Frozen Poultry

Kind	Dec. 1 5-Year Avg. 1934-38	Dec.1 1938	Nov. 1 1939	Dec. 1 1939	% Change Dec. '38-Dec. '39
		(Thousand Pounds)			
Broilers	15,979	11,460	10,000	10,562	− 7.8
Fryers	12,867	12,534	7,257	11,459	− 8.5
Roasters	24,585	25,804	13,046	24,994	− 3.1
Fowls	19,478	18,502	15,836	23,597	+27.5
Turkeys	14,990	18,111	8,026	26,362	+45.5
Ducks	6,032	9,276	9,203	8,057	−13.1
Miscellaneous	19,647	22,401	15,860	21,999	− 1.7
Total	113,578	118,088	79,228	127,030	+ 7.5

Hatchery Operations

The output of hatchery chicks during November this year is slightly higher than that of last year, and the highest November production of record the Agricultural Marketing Service says.

The combined production of 73 commercial hatcheries reporting for November was 1,733,000 chicks, which is 1 per cent greater than the number hatched by these

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of plants	Eggs Set During November			Salable Chicks Hatched During November			Chicks Booked Dec. 1 for Dec. or Later Delivery			
		1939	1938	% chg.	1939	1938	% chg.	No. of plants	1939	1938	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	9	1,214	1,041	+17	791	829	− 5	10	1,854	2,005	− 8
Mid. Atl.	10	259	348	−26	183	211	−13	10	367	410	−10
S. Atl.	17	602	461	+31	383	304	+26	11	913	770	+19
Central	37	652	627	+ 4	376	371	+ 1	34	475	488	− 3
TOTAL	73	2,727	2,477	+10	1,733	1,715	+ 1	65	3,609	3,673	− 2

same plants in 1938. The hatcheries reporting are located in States along the Atlantic seaboard and in certain Midwestern States where production of fall and early winter broilers is an important industry.

The New England and Middle Atlantic States show decreases in the number of chicks hatched compared with a year ago. In New England the decrease was 5 per cent, and in the Middle Atlantic States 13 per cent. Since more of the feed used in broiler production in this area is "shipped in" the less favorable relation of the price of chickens to the price of feed is reflected in this decrease.

The increase in the production of chicks in the Central States was 1 per cent, and in the South Atlantic States 26 per cent.

The November hatchings for the entire country were 99 per cent heavy breeds and 1 per cent light breeds. In 1938, the same percentage of light and heavy breeds was reported.

Advance orders for December or later delivery show a decrease of 2 per cent from last year. This indicates a cautious buying program on the part of poultry producers who raise chicks for egg producing purposes.

—Comment from Hatchery Report.

Egg Breaking Operations

Egg Breaking Operations During November, 1939

Commodity		Quantities reported to date for Nov. 1939	Same firm comparison		
			Nov. 1939	Nov. 1938	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		232,334	226,734	161,867	+ 40
Mixed eggs (plain)		160,410	160,410	31,856	+404
Mixed eggs (emulsions, also with sugar, salt, etc.)		46,287	46,287	46,994	− 2
Egg whites (all descriptions)		175,048	175,048	69,211	+153
Egg Yolks Packed	Without salt, sugar, etc.	167,572	167,572	52,493	+219
	With sugar	3,477	3,477	50,556	− 93
	With salt	0	0	0	
	All yolk emulsions, including glycerine	0	0	0	
Total—pounds		785,128	779,528	412,977	+ 89
Total—case egg equivalent		22,432	22,272	11,799	
Number of firms reporting		33	31		

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		November 1939	November 1938	Jan. to Nov., Inc. 1939	Jan. to Nov., Inc. 1938
Eggs in Shell	(doz.)	243,984	134,806	2,389,650	1,891,105
Eggs and Yolks, frozen, dried, or canned	(lbs.)	Not available	Not available	Not available	Not available
Live Poultry	(lbs.)	3,793	5,743	158,761	70,645
Dressed Poultry	(lbs.)	188,462	170,345	2,334,370	1,616,783

Imports of Eggs and Poultry

Commodity		November 1939	November 1938	Jan. to Nov., Inc. 1939	Jan. to Nov., Inc. 1938
Eggs in Shell	(doz.)	31,451	27,116	298,767	209,960
Whole Eggs, dried	(lbs.)	9,500	20,200	50,000	172,315
Whole Eggs, frozen	(lbs.)	0	0	420	938
Yolks, dried	(lbs.)	102,280	61,894	628,355	313,719
Yolks, frozen	(lbs.)	0	46,410	25,330	476,630
Egg Albumen, dried	(lbs.)	38,200	107,607	453,779	630,346
Egg Albumen, frozen	(lbs.)	0	0	0	30
Dressed Poultry	(lbs.)	15,482	16,208	173,382	499,964
Poultry, prepared	(lbs.)	31,620	28,992	681,871	460,810
Live Poultry	(lbs.)	68,282	84,600	689,691	1,194,482

Poultry Canning Operations

Poultry Canning Operations During November, 1939

Commodity	Quantities reported to date for Nov. 1939	Quantities reported for Oct. 1939	Same Firm Comparison		
			Nov. 1939	Nov. 1938	% change in 1939
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	2,577,825	3,159,841	2,577,825	2,454,242	+5
Number of firms reporting	19	19	19		

Colored Boxes Suggested for Sexed Chicks

County Agricultural Agent Hans Kardel of Charlotte, Mich., recommended to hatcherymen recently that sexed chicks should be placed in different colored boxes before shipment to prevent mistakes in shipping. He said two poultrymen, who had ordered pullet chicks, had received 98 per cent cockerel chicks instead.

In both instances, Mr. Kardel said both the buyers and sellers had requested him to examine the chickens and verify the complaints. The hatcherymen speedily adjusted after receiving his report. Mr. Kardel suggested that boxes of one color should be used for unsexed chicks, while the sexed cockerel chicks might be placed in red boxes and sexed pullets in blue boxes. He declared there should be some way to identify shipments speedily and prevent mistakes such as have been called to his attention on two occasions this year.

—Produce Packer, Dec. 9, 1939.

RESULTS OF LAYING TESTS

Climbing from eleventh position a month ago to highest place among all 1181 pens at standard tests on December 1, W. C. Mullin's R. I. Reds at Texas deserve a blue ribbon. These birds have averaged 54 eggs and 55.7 points per bird thus far.

A second pen of Mullin's Reds at Texas topped all other standard test pens for November by making a well-nigh perfect record. These 13 Reds averaged 29.2 eggs and 30.6 points each during the 30 days, totaling 380 eggs, 397.85 points.

H. J. Hardin's Rhode Island Reds at Georgia occupy second highest position to December 1. R. E. & F. H. Kendrick's Reds at Rhode Island advanced to third highest perch.

Heading the White Leghorn division, and rating fourth place among all pens of all breeds, is J. A. Hanson's entry at Storrs. Eben Wood's New Hampshires at Storrs top all opponents in their class.

Norman W. Amidon's Barred Rocks at Pennsylvania maintain a sizeable lead over all entries in their breed. In the White Rock section, E. A. Hirt ranks number one, with Townsley Trapnest Farm close behind and John Spangenberg third.

In front of all other hens to December 1 is Parmenter's Red hen at Storrs, where she has 65.75 points earned from 60 eggs in the 61 days. W. A. Seidel's best bird at Texas leads the Leghorns; Eben Wood's heaviest producer at Storrs blazes the way for New Hampshires; John Spangenberg's best hen at Maine leads in White Rocks; and Dryden's highest producer at Storrs is on top among Barred Rocks.

Twenty Highest Pens, All Breeds, to December 1

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	703	724.90	Texas
H. J. Hardin	Rhode Island Red	706	716.15	Georgia
R. E. & F. H. Kendrick	Rhode Island Red	669	698.55	Rhode Island
J. A. Hanson	White Leghorn	718	698.15	Storrs
H. J. Hardin	Rhode Island Red	682	694.30	Georgia
J. J. Warren	Rhode Island Red	690	685.15	Storrs
Eben Wood	New Hampshire	642	682.65	Storrs
W. E. Pyles and Son	White Leghorn	671	678.60	Georgia
J. J. Warren	Rhode Island Red	688	678.15	Storrs
E. B. Parmenter	Rhode Island Red	671	673.35	Storrs
Thomas Mettler	Rhode Island Red	673	667.50	Hunterdon, N. J.
J. A. Hanson	White Leghorn	673	665.75	Storrs
W. E. Pyles and Son	White Leghorn	649	664.90	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	694	664.90	Passaic, N. J.
Alfred Mac Millan	White Leghorn	642	663.45	Texas
Kauder's Pedigreed Leghorns	White Leghorn	672	660.10	Georgia
Kauder's Pedigreed Leghorns	White Leghorn	654	657.25	Georgia
Nelson's Leghorn Breeding Farm	White Leg.	676	655.60	Georgia
G. M. Heberer	White Leghorn	659	655.20	Texas
W. C. Mullins	Rhode Island Red	631	652.50	Texas

High Pen in Each Standard Test to December 1

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	703	724.90	Texas
H. J. Hardin	Rhode Island Red	706	716.10	Georgia
R. E. and F. H. Kendrick	Rhode Island Red	669	698.55	Rhode Island
J. A. Hanson	White Leghorn	718	698.15	Storrs
Thomas Mettler	Rhode Island Red	673	667.50	Hunterdon, N. J.
Alampi Poultry Breed. Farm	Rhode Island Red	694	664.90	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	638	652.35	Florida
Burr's Poultry Farm	White Leghorn	644	643.10	Pennsylvania
W. E. Pyles and Son	White Leghorn	613	615.35	Michigan
Foreman Poultry Farm	White Leghorn	637	611.00	Oklahoma
Foreman Poultry Farm	White Leghorn	608	608.80	Central New York
E. B. Parmenter	Rhode Island Red	605	606.75	Western New York
J. J. Warren	Rhode Island Red	584	582.00	New York State
Mishler-Liggett	Rhode Island Red	582	561.75	Arizona
John Spangenberg	White Rock	566	548.85	Maine
Bagby Poultry Farm	White Leghorn	550	546.20	Missouri

High Hen in Each Standard Test to December 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	60	65.75	Storrs
W. C. Mullins	Rhode Island Red	61	65.70	Texas
E. B. Parmenter	Rhode Island Red	59	63.60	Rhode Island
W. H. Wilson	Rhode Island Red	60	63.30	Georgia
L. H. Ritzhaupt	Rhode Island Red	57	62.35	Oklahoma
George A. Pearce	New Hampshire	59	61.60	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	57	61.55	Florida
E. B. Parmenter	Rhode Island Red	56	61.50	Passaic, N. J.
Bryan J. Snell	White Leghorn	58	60.90	Pennsylvania
E. B. Parmenter	Rhode Island Red	57	60.65	New York State
Foreman Poultry Farm	White Leghorn	55	59.35	Maine
E. B. Parmenter	New Hampshire	56	59.25	Western New York
Foreman Poultry Farm	White Leghorn	54	59.20	Missouri
J. J. Warren	Rhode Island Red	56	58.05	Michigan
Del Rio Farm	New Hampshire	51	54.95	Arizona
Foreman Poultry Farm	White Leghorn	53	54.10	Central New York

High Pen in Each Breed to December 1—(61 Days)

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	703	724.90	Texas
J. A. Hanson	White Leghorn	718	698.15	Storrs
Eben Wood	New Hampshire	642	682.65	Storrs
Norman Amidon	Barred Rock	650	632.00	Pennsylvania
E. A. Hirt	White Rock	598	586.30	Storrs
Schwegler's Hatchery	White Wyandotte	583	532.70	Pennsylvania
Laclede Hatchery	Black Australorp	540	499.90	Oklahoma
R. S. Thomas	Ancona	511	453.60	Pennsylvania
Raymond Murphy	White Giant	383	388.70	Missouri
Colonial Poultry Farm	White Minorca	356	358.40	Texas
Famous Poultry Farms	Leghorn Cross	371	346.60	Georgia
Lindstrom Poultry Farm	Buff Minorca	393	343.60	Texas
E. J. Covey	Black Minorca	341	333.10	Texas
Cedarlaid Poultry Farm	Brown Leghorn	355	281.00	Florida
S. E. Raymond	Lamona	277	262.25	Storrs
Iowa Master Breeders	Buff Orpington	257	254.10	Missouri
Charles A. Ward	Buff Leghorn	199	172.05	Oklahoma
Harry Phillips	Columbian Rock	136	137.70	Missouri
R. L. Jones	Light Brahma	36	35.80	Hunterdon, N. J.
Walter Dobe	Barnevelder	10	9.05	Western New York
Daniel Riker	Buff Rock	7	5.30	Maine

High Hen in Each Breed to December 1—(61 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	60	65.75	Storrs
W. A. Seidel	White Leghorn	59	63.90	Texas
Eben Wood	New Hampshire	59	63.40	Storrs
John Spangenberg	White Rock	56	58.70	Maine
Dryden Poultry Breeding Farm	Barred Rock	56	58.05	Storrs
T. D. Brown	White Minorca	53	56.65	Texas
Lindstrom Poultry Farm	White Wyandotte	53	52.90	Missouri
Raymond Murphy	White Giant	49	51.90	Missouri
Famous Poultry Farms	Leghorn Cross	51	48.60	Georgia
Laclede Hatchery	Black Australorp	46	47.65	Oklahoma
R. S. Thomas	Ancona	47	45.55	Passaic, N. J.
Henry F. Waitt	Buff Minorca	44	44.70	Maine
S. E. Raymond	Lamona	42	44.65	Storrs
Iowa Master Breeders	Buff Orpington	39	39.65	Missouri
Stephen Costa	Black Minorca	40	37.35	Passaic, N. J.
Cedarlaid Poultry Farm	Brown Leghorn	40	33.05	Florida
Harry Phillips	Columbian Rock	32	32.55	Missouri
Charles A. Richardson	Buff Leghorn	37	31.70	New York State
R. L. Jones	Lt. Brahma	23	23.20	Hunterdon, N. J.
Walter Dobe	Barnevelder	10	9.05	Western New York
Daniel Riker	Buff Rock	7	5.30	Maine

High Pen in Each Standard Test for November

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	380	397.85	Texas
Thomas Mettler	Rhode Island Red	355	359.40	Hunterdon, N. J.
J. A. Hanson	White Leghorn	359	358.35	Storrs
H. J. Hardin	Rhode Island Red	346	356.90	Georgia
R. E. and F. H. Kendrick	Rhode Island Red	331	353.50	Rhode Island
Alampi Poultry Breed. Farm	Rhode Island Red	358	351.80	Passaic, N. J.
J. J. Warren	Rhode Island Red	333	342.55	Florida
E. B. Parmenter	Rhode Island Red	318	324.95	Western New York
Foreman Poultry Farm	White Leghorn	312	322.25	Central New York
Burr's Poultry Farm	White Leghorn	309	316.70	Pennsylvania
Crooks Farm	Rhode Island Red	314	316.50	Michigan
Foreman Poultry Farm	White Leghorn	313	309.50	Oklahoma
Foreman Poultry Farm	White Leghorn	306	304.85	New York State
Mishler-Liggett	Rhode Island Red	309	303.35	Arizona
Bagby Poultry Farm	White Leghorn	284	291.85	Missouri
John Spangenberg	White Rock	283	282.15	Maine

High Hen in Each Standard Test for November

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	30	33.00	Rhode Island
E. B. Parmenter	Rhode Island Red	30	33.00	Storrs
W. A. Seidel	White Leghorn	30	32.90	Texas
W. H. Wilson	Rhode Island Red	30	32.80	Georgia
Thomas Mettler	Rhode Island Red	30	32.60	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	29	31.90	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	29	31.85	Florida
Crawford's Red Yards	Rhode Island Red	29	31.70	Oklahoma
Foreman Poultry Farm	White Leghorn	30	31.50	Maine
E. B. Parmenter	Rhode Island Red	29	31.35	New York State
E. B. Parmenter	Rhode Island Red	29	31.10	Western New York
Crooks Farm	Rhode Island Red	28	30.65	Michigan
Del Rio Farm	White Leghorn	29	30.55	Arizona
Piho Brothers	White Leghorn	28	30.20	Pennsylvania
Missouri Valley Hatchery	Rhode Island Red	27	29.70	Missouri
Foreman Poultry Farm	White Leghorn	27	29.05	Central New York

20 Highest White Leghorn Pens in Country to December 1

Owner	Eggs	Points	Test
J. A. Hanson	718	698.15	Storrs
W. E. Pyles and Son	671	678.60	Georgia
J. A. Hanson	673	665.75	Storrs
W. E. Pyles and Son	649	664.90	Georgia
Alfred Mac Millan	642	663.45	Texas
Kauder's Pedigreed Leghorns	672	660.10	Georgia
Kauder's Pedigreed Leghorns	654	657.25	Georgia
Nelson's Leghorn Breeding Farm	676	655.60	Georgia
George M. Heberer	659	655.20	Texas
Sand Springs Home Farm	658	646.50	Texas
Burr's Poultry Farm	644	643.10	Pennsylvania
C. B. Davidsen	642	638.20	Georgia
W. A. Seidel	669	636.70	Texas
George M. Anthony	669	630.45	Georgia
J. A. Hanson	612	623.20	Texas
Booth Farms and Hatchery	648	621.80	Georgia
W. A. Seidel	622	620.85	Texas
Foreman Poultry Farm	670	619.70	Texas
Foreman Poultry Farm	620	617.95	Georgia
W. E. Pyles and Son	613	615.35	Michigan

20 Highest Rhode Island Red Pens in Country to December 1

Owner	Eggs	Points	Test
W. C. Mullins	703	724.90	Texas
H. J. Hardin	706	716.15	Georgia
R. E. and F. H. Kendrick	669	698.55	Rhode Island
H. J. Hardin	682	694.30	Georgia
J. J. Warren	690	685.15	Storrs
J. J. Warren	688	678.15	Storrs
E. B. Parmenter	671	673.35	Storrs
Thomas Mettler	673	667.50	Hunterdon, N. J.
Alampi Poultry Breeding Farm	694	664.90	Passaic, N. J.
W. C. Mullins	631	652.50	Texas
E. B. Parmenter	638	652.35	Florida
E. B. Parmenter	612	650.50	Rhode Island
Booth Farms and Hatchery	656	645.70	Georgia
Alampi Poultry Breeding Farm	622	644.05	Passaic, N. J.
W. C. Mullins	646	643.50	Texas
Ralph W. Anderson	654	635.90	Storrs
W. H. Wilson	691	634.20	Georgia
J. J. Warren	613	619.95	Florida
Geo. E. Wells and Son	623	619.85	Storrs
George A. Pearce	663	619.35	Passaic, N. J.

20 Highest New Hampshire Pens in Country to December 1

Owner	Eggs	Points	Test
Eben Wood	642	682.65	Storrs
Kauder's Pedigreed Hampshires	624	648.25	Georgia
Hubbard Farms	668	627.10	Pennsylvania
Pine Top Poultry Farm	586	614.85	Storrs
George A. Pearce	606	609.15	Hunterdon, N. J.
Pine Mountain Valley Farms	624	602.85	Georgia
Thomas J. Harrold	650	602.85	Georgia
Pine Top Poultry Farm	635	597.40	Georgia
George A. Pearce	618	595.10	Passaic, N. J.
Ned C. Willoughby	646	594.15	Georgia
Pine Mountain Valley Farms	627	592.95	Georgia
Woody's Hatchery and Poultry Farm	606	573.55	Georgia
R. H. Barteaux	572	568.15	Pennsylvania
A. J. Williams	551	565.65	Florida
Pine Top Poultry Farm	574	564.10	Michigan
H. Guy Loose	582	561.60	Pennsylvania
Eben Wood	536	553.85	Passaic, N. J.
Ned C. Willoughby	592	551.25	Georgia
Fuzzydele Farms	534	549.05	Pennsylvania
Thomas Mettler	562	536.40	Pennsylvania

20 Highest Barred Plymouth Rock Pens in Country to December 1

Owner	Eggs	Points	Test
Norman W. Amidon	650	632.00	Pennsylvania
R. C. Cobb	565	543.20	Storrs
J. W. Schaible	586	535.95	Hunterdon, N. J.
E. B. Parmenter	530	534.65	Georgia
Woody's Hatchery and Poultry Farm	593	532.20	Georgia
R. R. Parks	544	521.50	Florida
Fuzzydele Farms	554	515.70	Storrs
R. R. Parks	552	511.15	Pennsylvania
Stuart W. Smith	531	503.35	Storrs
Broad Acres Farm	546	495.95	Storrs
Dryden Poultry Breeding Farm	538	495.95	Georgia
Dryden Poultry Breeding Farm	556	495.40	Storrs
Schwegler's Hatchery	549	494.55	Central New York
Dryden Poultry Breeding Farm	543	488.70	Pennsylvania
E. B. Parmenter	504	485.95	Pennsylvania
R. R. Parks	497	474.20	Maine
Riley Poultry Farm	481	464.65	Oklahoma
P. N. Hibbard	502	451.00	Storrs
Fellows Brothers	463	447.00	Storrs
Hockhockson Farm	499	442.15	Passaic, N. J.

20 Highest White Plymouth Rock Pens in Country to December 1

Owner	Eggs	Points	Test
E. A. Hirt	598	586.30	Storrs
Townsley Trapnest Farm	595	580.75	Georgia
John Spangenberg	598	577.10	Storrs
Kalerok Farm	566	568.55	Pennsylvania
Drumm Egg Farm	574	555.85	Georgia
John Spangenberg	566	548.85	Maine
Kalerok Farm	531	534.60	Maine
Homestead Farm	611	516.90	Pennsylvania
Riley Poultry Farm	526	501.05	Oklahoma
A. C. Lawton	528	500.65	Storrs
A. H. Ward Poultry Farm and Hatchery	524	480.95	Oklahoma
Booth Farms and Hatchery	520	479.35	Texas
E. A. Hirt	479	477.55	Rhode Island
Missouri Valley Poultry Farms	529	473.75	Texas
Townsley Trapnest Farm	492	470.70	Pennsylvania
Oscar W. Holtzapple	508	468.35	Florida
Riley Poultry Farm	530	466.35	Georgia
Riley Poultry Farm	513	460.25	Storrs
Booth Farms and Hatchery	473	456.75	Oklahoma
Belcarihill Farms	514	453.35	Pennsylvania

Average Production in Each Test to December 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. in Ounces	Per Cent Mortality for Nov.	Per Cent Mortality to Dec. 1
Georgia	1,352	40.52	38.16	22.58	1.18	1.92
Pennsylvania	1,079	38.03	35.81	22.58	1.57	1.76
Texas	1,456	37.45	35.66	22.84	1.03	1.03
Storrs	1,300	36.76	35.15	22.94	.76	.76
Oklahoma	650	35.09	33.31	22.77	.15	1.07
Hunterdon, N. J.	650	33.17	31.53	22.80	1.07	1.69
Florida	1,248	32.02	30.16	22.58	1.20	1.36
Passaic, N. J.	1,144	30.88	29.64	23.01	1.13	1.22
Michigan	741	31.04	29.37	22.70	1.21	1.61
Arizona	390	29.87	27.66	22.20	.76	2.30
Missouri	780	24.07	24.17	24.09	1.15	1.15
New York State	1,092	22.49	23.17	22.84	1.55	1.55
Central New York	910	24.63	22.97	22.36	.21	.21
Maine	1,027	24.43	22.65	22.22	.97	1.36
Rhode Island	650	22.64	22.21	23.54	2.61	3.84
Western New York	884	23.50	21.93	21.39	1.13	1.13
All Tests	15,353	31.31	29.72	22.77	1.11	1.41

High Pen, Each Breed, in Illinois Non-Standard Test to December 1

Owner	Breed	Eggs	Points
Walter Swanson	White Leghorn	234	229.85
John M. Pfeifer	New Hampshire	207	224.25
Berry-Ajax Hatchery	Black Australorp	199	190.65
Mapleside Poultry Farm	Barred Rock	192	169.35
Schafer Hatchery	Rhode Island Red	166	169.20
Belldear Hatchery	White Rock	166	161.45
Schafer Hatchery	White Wyandotte	139	142.55
Wallace Moody	Buff Rock	117	109.75

5 High Pens, R. O. P. Progeny Test, Paterson, N. J., to December 1

Owner	Breed	Eggs	Points
E. B. Parmenter	Rhode Island Red	745	714
Crooks Farm	Rhode Island Red	697	683
W. B. Coles	White Leghorn	638	586
Eli Bodine	White Leghorn	604	577
Creighton Brothers	White Leghorn	512	484

High Pen in Each Breed, Vineland, N. J., Hen Test to December 1

Owner	Breed	Eggs	Points	Class
W. A. Cray	White Leghorn	263	281	Two-Year
E. B. Parmenter	Rhode Island Red	244	265	Two-Year
Hockhockson Farm	Barred Rock	215	228	Two-Year
Albert Lawton	White Rock	143	152	Two-Year
Pine Top Poultry Farm	New Hampshire	114	123	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	162	176	Three-Year
G. E. Coleman	Rhode Island Red	126	134	Three-Year
Nedlar Farm	New Hampshire	80	86	Three-Year
J. A. Hanson	White Leghorn	176	192	Mixed Age
Kerr Chickeries	Rhode Island Red	170	183	Mixed Age
Quimby School	White Rock	163	174	Mixed Age
Schwegler's Hatchery	White Wyandotte	143	153	Mixed Age
Eben Wood	Barred Rock	112	121	Mixed Age
Wene Chick Farm	New Hampshire	41	44	Mixed Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	4114	4441.85	Two-Year
J. J. Warren	Rhode Island Red	3973	4259.65	Two-Year
Schwegler's Hatchery	Barred Rock	3382	3516.65	Two-Year
Albert Lawton	White Rock	3136	3311.85	Two-Year
Pine Top Poultry Farm	New Hampshire	2816	3035.45	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6158	6598.05	Three-Year
J. J. Warren	Rhode Island Red	5975	6432.70	Three-Year
Nedlar Farm	New Hampshire	4735	5094.25	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to December 1

Owner	Breed	Eggs	Points	Class
E. B. Parmenter	Barred Rock	81	88.00	Two-Year
J. J. Warren	Rhode Island Red	61	66.25	Two-Year
Fuzzydele Farms	New Hampshire	59	64.80	Two-Year
Schwegler's Hatchery	White Leghorn	52	56.25	Two-Year
Lindstrom Poultry Farm	White Wyandotte	30	32.60	Two-Year
Fuzzydele Farms	White Leghorn	93	102.05	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Lindstrom Poultry Farm	White Leghorn	3656	3893.75	Two-Year
E. B. Parmenter	Rhode Island Red	3633	3859.45	Two-Year
E. B. Parmenter	Barred Rock	3392	3611.15	Two-Year
Fuzzydele Farms	New Hampshire	3314	3543.05	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3120	3314.25	Two-Year
A. M. Wolgemuth	White Leghorn	4338	4584.30	Mixed Age

Disposal of Deceased Birds

One of the biggest problems a poultryman has is the disposing of his dead birds. The best and most effective way is to burn completely every bird that dies, but there is not one poultryman out of ten that will take the time and trouble to burn these birds; usually they will wait until there are four or five birds accumulated and then they will probably dig a shallow hole and bury them. The trouble with this system is, that some animal, your dog or the neighbor's dog, will probably have these birds up before long and have them spread over the place, and if these birds have died from an infectious cause, it will probably spread among the rest of the birds.

Fred Mortenson, Kingsburg, Calif., has an idea that seems to be working very well. Mr. Mortenson is a rancher and has approximately 1,000 birds. Like all poultrymen, he has had quite a bit of trouble disposing of his birds that die. He picked a secluded spot, not too close to his poultry house, and has dug a pit 4 feet square and 6 feet deep. This pit is covered with redwood. Extending through this covering and above the ground 18 inches is a pipe 9 inches in diameter. He has an airtight lid that he puts over this pipe to keep out all odors and flies. If a poultryman uses this system, as the birds die, he can drop them through this 9-inch pipe into this 6-foot pit and forget about them. According to Mr. Mortenson, he has no trouble with flies or odors. The size of this pit depends upon the size of the flock.

—Ralph Sherman in San Joaquin Valley Poultryman, Dec. 23, 1939.

BEFORE the hunting season opened in Michigan, George A. Johnson of Lowell, Mich., had a flock of 75 White Pekin ducks pasturing along the Flat River which borders his farm. His flock soon shrank to 17, according to The Produce Packer, hunter having "mistaken" his birds for white wild ducks, and having bagged all they coul lug away.

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Vol. 2, No. 14 February, 1940

Plan for Promoting Increased Sales of Poultry and Eggs

Editor's Note: At a mass meeting held on August 5, 1939, during the Seventh World's Poultry Congress at Cleveland, the Congress executive board was empowered to act as a planning committee for a long-time program of poultry and egg consumption, enlarging its committee as it deemed necessary and making its recommendations to the poultry industry early in 1940. The following plan was prepared and it was given the unanimous approval of representatives of the industry meeting in Chicago, Ill., on January 16, 1940.

1. That a National Board be set up to consist of one representative chosen by each national and regional association of producers, breeders, hatcherymen, co-operative marketing groups, processors, packers, distributors, retailers who are also receivers, feed manufacturers, feed dealers, equipment manufacturers, supply manufacturers, etc. (An organization to be regional must have membership in at least three states.) It is recommended that at all times membership on the Board shall be so constituted that the producer section shall be in a majority.

The Board may add to its membership any organization which in its judgment should be included.

The Board may choose the necessary committees, such as executive, financing, research, etc.

The Planning Committee recommends that the associations so described be each asked immediately to select a representative to this national organization, and that a meeting of the organization be called as soon as a minimum of ten (10) delegates can be appointed, but not later than Thursday, July 25, 1940.

2. The Planning Committee shall continue to function until such time as the National Board is selected but it will make no permanent commitments.

Initial Financing

3. The Planning Committee recommends that for the first two years' operation (unless a permanent plan can be worked out sooner) a minimum of $50,000 per year be raised by voluntary subscription. For this purpose the industry is to be divided into five (5) groups as follows:

1. Processors, packers, warehousers, dealers, distributors and hatcheries.
2. Feed manufacturers, dealers, handlers of special ingredients and other commodities fed to poultry.
3. Incubator and brooder manufacturers, equipment manufacturers and manufacturers of all kinds of supplies used in the poultry industry in any way.
4. Distributors, retailers purchasing products direct from original receivers, auctions, and all co-operative organizations.
5. Press.

That a minimum of $30,000 be assured before the National Board shall begin work. Also, that no pledged money be called in until this minimum shall be attained.

First Year

4. Bearing in mind that there exists the necessity for contacting numerous organizations, companies and individuals to arrive at an equitable basis for participating in this program, and that the first year's work must necessarily be formative, the Planning Committee visualizes that the first year's work will consist largely of the following:

a. Organize the industry so that there will be a central agency to act as a clearing house for ideas to promote the consumption of poultry and eggs.

b. Make a survey of promotional and research work now being done in order to avoid duplication and in order to make available to the industry the benefit of work done and in progress.

c. Study what further research should be done and coordinate it.

d. Formulate plans for developing activity to educate the public to use more poultry and poultry products.

Permanent Financing

5. A plan of permanent financing shall be worked out after thorough consultation with all groups and consideration of all sound means proposed. The permanent financing to be on a basis that will draw all phases of the industry into a fair assessment for this activity, that will cover the following groups of the industry:

a. Producers, breeders, hatcherymen, auctions, co-operative marketing groups, processors and packers, hucksters, and all original receivers of eggs and live poultry, and farm dressed turkeys.

b. Manufacturers of poultry feeds, mixed feeds, separate ingredients, specialty ingredients, feed dealers, etc.

c. Manufacturers of poultry boxes, fibre or wood; egg cases, fibre or wood; egg cartons; fillers and flats for egg cases; egg cans; chick boxes; incubators; brooding equipment; feeding and watering devices; poultry dressing devices; poultry houses, etc.

d. Handlers of, or dealers in, eggs and poultry and or products between the original receiver and the ultimate retailer distributor, to include the retail groups who secure products direct from original receivers.

Permanent Goal

6. The Planning Committee recommends that the goal of the organization be the following permanent promotional program, with additions and amendments as may be made from time to time as experience dictates:

a. To work co-operatively with existing local, state, regional and national organizations now doing consumer work and to stimulate the extension of this work in areas not now organized.

b. Correlate ideas and work, for improvement of the general quality and care of poultry and poultry products, working with local, state, regional and nationally organized groups for this purpose.

c. Prepare pamphlets and bulletins for local, state and national use.

d. Test and develop recipes in laboratory kitchen.

e. Prepare recipes and menus for food editors.

f. Develop cooking schools.

g. Conduct demonstrations before butchers, bakers, etc.

h. Develop merchandising tie-ups and similar service with grocers, meat retailers, bakers, etc.

i. Develop sales promotion ideas for the industry.

j. Contact federal, state and private experiment station departments.

k. Develop and maintain a working library of poultry and egg information.

l. Co-operate with existing agencies to develop better statistical information relative to product consumption and new standards.

m. Set up a speakers' bureau and provide material for speeches.

n. Prepare feature articles for magazines and other publicity outlets.

o. Make contact with radio stations and furnish material for their use.

p. Prepare news stories for release as indicated by conditions.

q. Consider plans for the advertising of poultry and poultry products.

r. Develop a monthly bulletin which will be helpful in keeping all interested parties advised of work done and will disseminate useful information to all parts of the country, thus fostering efficient consumer educational activities.

Chickens Least Source of Infection for Other Animals

Birds are subjected to diseases caused by viruses, bacteria, fungi, protozoa, nutritional deficiencies and various external and internal parasites. These diseases are as numerous and as complicated as are the diseases of any other species of animal or man, and, for this reason, their solution is equally as difficult. In fact, there exists in chickens or birds a disease to parallel almost any disease in any other animal. Thus, chickens have malaria, tuberculosis, typhoid, tumors and pox, all of which are adapted to the bird. At the same time, they have a few diseases actually acquired from other animals such as swine erysipelas and tularemia.

However, chickens are the least source of infection for other animals or for man among all of the food producing animals. Moreover, an egg from a healthy hen is bacteria-free which makes it the only food of animal origin of that nature.

—F. R. Beaudette, N. J. Agricultural Extension Service Release, Jan. 23, 1940.

BELGIUM has now become the largest consumer of eggs in Europe. According to the latest returns, consumption per head in that country totals 212 eggs per annum, against 143 in England, 129 in Switzerland, 119 in Germany (in 1938), 200 in Holland, and 96 in Denmark and Spain.

—Poultry World, London, England, Jan. 19, 1940.

Practical Poultry Buying for Consumers

By Howard C. Pierce
Great Atlantic and Pacific Tea Co.

Condensed from a Talk

ALTHOUGH millions of housewives buy our products every day in the year, not many seem to really know much about them. For example, how many housewives know the difference between broilers, roasters and fowls? Not many! Yet if these consumers are to buy in accordance with their true needs, and within the most accurate requirements of their budgets, they certainly should know these differences. Just what varieties of meat does the term "poultry" include?

Classes of Market Poultry

First, and probably more widely distributed through retail markets than any other poultry item, is **fowl.** Often commonly known as "stewing chicken," fowl is the mature hen, adaptable for boiling, fricassee, sautes, in soups, salads, and for serving as cold cuts. Available at all times of the year, it is lower in price than any other chickens and has a larger percentage of meat to bone than any other poultry with the exception of capons, turkeys, and squabs.

Second on our list are **chickens.** In the exact sense, chickens refer to the young of the fowl. Usually the term is applied only to young cockerels, or male birds, since the young female is known as a **pullet** and generally is packed and sold separately.

There are four classifications of chickens: first, the **broilers,** young birds, approximately 10 weeks old and weighing about two and one-half pounds each; second, **fryers,** three to four months old and weighing two and one-half to three and one-half pounds; third, **roasters,** birds over three and a half pounds, aged up to eight or nine months, and, fourth and last, **capons,** or desexed chickens, which continue to grow beyond the maturity of the average bird and reach weights of eight or even nine pounds and heavier.

In these different types of chicken, it is to be noted that the percentage of meat to bone increases with the age of the bird. Broilers, for example, are about 30 per cent waste, while capons are less than 20. Of the four items, fryers are the lowest in price, because they are heavily marketed and the most

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, July 31, 1939 economical from the standpoint of poultry meat production. When a chicken reaches the age and weight of a fryer, it most nearly represents a balance between the poultryman's two production costs – the cost of the eggs and hatching, and the cost of feed, dressing and other items which go into raising the bird for market.

Broilers, as the youngest, lightest birds, of course, represent the greatest percentage of initial cost to the poultryman. With roasters a greater percentage of the poultryman's cost goes into fattening the bird and making him gain. In other words, a roaster requires more feed per pound of weight than the fryer. Capons—the height of elegance in the poultry trade – carry the most succulent, delicious meat. Their cost is greater than that of other types of chicken because fewer are produced, and because the cost of production is much higher than with fryers, broilers or roasters.

More Fat in Young Birds

In addition to the classification of fowl and chickens, there are several other facts about these foods which every consumer should know. The fat content in the skin and flesh of mature birds, such as fowl, is much higher than in very young birds, as broilers or fryers. Consequently the fuel value, as expressed in calories per pound, increases with the age of the bird. At all ages the white meat of the chicken contains less fat than dark meat.

The muscles of the younger birds contain a larger percentage of soluble proteins, and those of mature birds are richer in the less soluble kinds. The cook takes note of this fact when she adds a bit of salt to the water in which she cooks the older birds, for this makes their protein content much more soluble and more easily digested.

Another change that takes place in chickens as they mature is the gradual increases in meat extractives in the muscle tissue. To these extractives is due much of the characteristic flavor of poultry. In young birds the quantity of extractives is small, and therefore their flavor is delicate. When poultry is immersed in water for any considerable time, the flavorous extractives pass into the water instead of remaining in the meat. This is why young birds—broilers, fryers, roasters and capons—give greatest satisfaction when cooked without water. The meat of fowls, however, is rich enough in extractives so that when cooked in water it forms a delightful broth. At the same time, the meat retains enough of the extractives to be quite rich in flavor.

Of all chickens, the "middleweights"—or fryers—can be cooked in the greatest number of ways. Fryers can be broiled, fried or roasted. Moreover, price differentials are such that a pair of fryers, totaling 6 pounds in weight, can often be bought for the same price as a 5-pound roasting chicken.

Ready-to-Cook Chickens

One of the most important developments in chicken marketing in recent years has been the appearance of the "ready-to-cook" bird. Dressed, drawn and quick-frozen in the packing plant, this bird is delivered to the housewife ready to be taken from its wrapper and popped into the oven. With fresh flavor, no waste and no trouble in preparation, ready-to-cook chickens, fowl, turkey, duckling and other poultry are becoming an important factor in modern food marketing.

Chicken is a truly American dish, but our greatest claim to fame in world poultry history is the turkey. The name itself, in English, has a curious origin. The Spanish explorers were the first to fully appreciate the merits of this remarkable bird. They took it home with them to Spain and ships from the Near East – and particularly Turkey – found it a valuable item of cargo on their journeys from Spain to other ports. Because those curious, New World birds arrived at these other lands on ships from Turkish ports, they were given the name of turkey.

Turkey Now Year-round Meat

The Pilgrim Fathers made the turkey the emblem of Thanksgiving, the symbol of a bountiful harvest. As the years passed, it became a popular dish for Christmas, but for many generations few were consumed aside from those dates. Today, however, turkey has become a year-round meat. It is widely served on Washington's Birthday, Easter and even at the Fourth of July.

Previously, fresh young turkeys were available October through January; now they are obtainable from June through March. In the last 10 years, the development of turkey breeding has progressed at such a rate that the egg production season has been doubled in length. Universally acclaimed for its fine flavor, turkey also is entitled to a place of honor in the poultry world because it has the greatest percentage of edible meat to bone and waste material than almost any other item.

Of the remaining types of poultry, ducklings also have made remarkable gains in production and consumption during recent years. One reason is that the cost of production of ducklings is low, and consequently they are offered to consumers at very attractive retail prices. The goose, however, has failed to gain the popularity in American markets which it enjoys abroad. In this country geese are raised only in small, scattered flocks—for the holiday trade and for their feathers.

No summary of modern poultry

marketing would be complete without mention of the huge amount of poultry which is used every year for canning—mainly fowl. This method of distribution has made startling gains in recent years. Best evidence of this trend is the fact that sales of canned chicken and other poultry in May, 1939, were 24 per cent above those of May, 1938.

Canned chicken soup, canned poultry meats for salad, chicken and noodles, chicken liver paste — these and many similar items are finding increasing favor with consumers. These collateral uses of poultry—uses other than those in which poultry is served as a main dish—will probably contribute a great deal toward putting the poultry world of tomorrow on a steadier, more stabilized basis.

In reviewing these foods from the consumer's point of view, one significant feature stands out: the tremendous variety in poultry meats themselves, but there are many widely different ways in which these meats can be prepared. They are served hot, in cold salads, sold in tins, smoked, boned and prepared in dozens of other tasteful ways.

No one has yet calculated the staggering amount of poultry products cooked and served in American homes every day. A clue to its size, however, may be gained from the fact that our company—the A & P — purchases and distributes approximately three million cases of eggs and 50 million pounds of chickens, fowl and turkey a year. As the American poultry industry's biggest retail salesman, we return in excess of 36 million dollars annually to poultrymen, moving their products through a vast, "streamlined" distribution system to more than six million consumers.

The poultry market as a whole already is a vast one, and the problem before producers and distributors is not only one of finding new customers, but also to get existing customers to increase the amount of poultry meats they now consume. In this task, it is up to the poultryman to steadily improve the quality of his product and his methods of grading and packing. The distributor, for his part, must render continuously more efficient service, reduce handling costs and strive to meet the consumer's most exacting needs.

In this work I think a special responsibility rests with the low cost, mass distributor, or chain store. Offering the broadest market and the lowest spread between farm and city prices, chain stores distribution today is a vital factor in popularizing the place of poultry in the average American family's diet. Vigorous advertising, efficient, coordinated handling and lower retail mark-up have enabled chains to steadily increase general poultry consumption, and this is a job which they will continue.

How to Market Better Dressed Poultry

By Harry E. Drews

Condensed from Poultry Tribune

THERE is today a real need for an improvement in marketing methods. Advances in marketing methods have fallen behind improvements in breeding, hatching and production.

Who markets our poultry now? Most of the marketing agencies will fall within these three groups—the large commercial dresser and packer in the producing districts who dresses and ships principally to the large consuming centers; the large city dresser or live market operator who handles (often under kosher methods) live poultry shipped or trucked to market; and the small "city sales" dresser in smaller cities and towns who dresses for local consumption. In this latter class might be included many poultry raisers and a few hatcherymen.

The large commercial dressers and packers have moved forward in their methods. They have watched closely the fattening methods and results. They have reduced package costs; almost without exception they have installed semi-scalding equipment with "temperature control" and use wax picking with the new improved waxes. They have gained in uniformity and attractiveness of their product and they have sharply reduced picking costs. Some of the leading firms have maintained research laboratories which have worked on their specific problems.

Most Opportunity in Small Cities

In the group of the smaller "city sales" dressers, there is most room for immediate improvement. The actual poultry consumption in smaller cities and towns is an enormous part of the total of the entire country, but it is often the neglected part of the total. Large cities have available in their stores more attractive market poultry, better displayed, and more accessible throughout the week, than the smaller marketing centers.

I live in a small city. In the middle of the week, a visit to 11 leading markets in my city revealed that only seven of the markets had any poultry on hand. This supply was composed of "left-overs" from Saturday, and was largely hard scalded poultry, puffy, barked and bruised, poorly picked, and unattractive. It had no "buyer appeal" compared with the attractively packaged foods, cold meats, cheese, and fresh cuts of meats that were displayed.

Poultry-Dairy Publishing Company, Mount Morris, Ill.
(Poultry Tribune, Feb. 1940)

Any advertising of the merits of chicken for my dinner would have been wasted in the face of the inaccessibility of a good, sound attractive product. Yet, with the present standards of living and low poultry prices, there is no reason to believe that people have an appetite for poultry only on Sunday.

Hard Scalding Not Recommended

Hard scalded poultry is no longer produced by the large commercial packers. Semi-scalding the poultry in water with a temperature of 125 to 130 degrees, depending on the tenderness and plumage of the bird; removal of the quills and part of the main body feathers; partly drying the birds; then dipping them in wax which is then stripped off, results, under proper temperature control, in uniform, attractive, clean poultry that will look well in the market, in the pan, and on the table. Hard scalded poultry, with an artificial plumpness produced by partially cooking the skin during scalding, deteriorates rapidly in the market or in the hands of the dresser, showing a slimy, sickly appearance after exposure, with scuffing and abrasions apparent as the carcass dries. In broiling or frying, a hard scalded chicken does not have the attractive golden brown color shown by semi-scalded birds nor the sound firm skin that is necessary for attractive poultry. Spoilage, as well as loss in appearance, is rapid.

Wax picking with the new improved waxes results in a clean removal of the pins, and a natural attractive bloom of the poultry. Semi-scalded and wax picked poultry can be held several days without any loss in quality. In fact, a tenderizing effect is gained through the action of the enzymes and lactic acid in the muscle tissues.

Improved Equipment Now Available

During the past year, striking improvements have been made in poultry wax with the development of the new all-petroleum waxes. They have made possible the development of small waxing equipment, suitable for the small dresser or the large flockowner.

These new waxing and semi-scalding units, produced by several manufacturers, are essentially well insulated, electrically heated, thermostatically controlled containers with accessories that make it possible for the small operator, with investments not far over $100, to duplicate the workmanship and savings of the large machine operator. Units heated with gasoline are also produced for those who do not have electricity available. The accurate temperature control of the better units is the secret of efficient operation. Wax losses with the small machine, operated efficiently, do not average more than 3 pounds per 100 birds.

Recently, I visited the plant of a local dresser in Omaha, Nebr., who had just installed a small waxing unit. He showed me poultry left over from the previous week-end market. The hard scalded poultry already had dropped down to a definite No. 2 quality; it was unattractive and unappealing. The semi-scalded poultry, wax picked, was still fresh and bright, ready for movement to the retailers as No. 1 poultry.

"That is the reason I have started semi-scalding and wax picking," he said.

Full Drawn Poultry Growing in Favor

Eviscerated or "fully drawn" poultry also offers an opportunity for rapid improvement in local poultry marketing. Four of the large packers are eviscerating and quick freezing for trade in large retail centers. Scattered activity among smaller dressers in smaller cities is showing some progress. In Quincy, Ill.; Lincoln, Nebr.; and Minneapolis, Minn., local dressers are marketing in volume fully dressed, Cellophane wrapped, quick frozen poultry which is attractive, convenient, and reasonable in cost to the consumer.

Production of eviscerated poultry is easily within the reach of the small dresser, either for retail sales or for restaurants and institutions. The rapid spread in refrigeration facilities and freezer boxes makes this expansion timely. Government inspection of the individual birds by a qualified government veterinarian is necessary before eviscerated poultry can be shipped into some of the largest centers, such as New York, but most other cities do not have that requirement.

Fully dressed quick frozen poultry may be sold effectively both from freezer cases where it is held at zero temperature, or through ordinary 40-degree meat cases. In the production of fully dressed poultry, the pinfeathers and fuzz should be removed thoroughly, the head and feet removed, the viscera thoroughly and completely removed, the giblets cleaned, the neck removed and wrapped with the giblets to be placed within the body cavity. Neatly wrapping the thoroughly clean bird in Cellophane and freezing it, completes the process. Sales of Cellophane-wrapped, unfrozen poultry, except for immediate consumption, are usually unsuccessful as the Cellophane wrapping on the moist unfrozen poultry provides a condition favorable for rapid bacterial growth. Fully dressed poultry that has been wrapped in Cellophane and frozen has good keeping quality even after defrosting. Apparently the freezing process destroys many of the bacteria present under the Cellophane wrapping, and the wrapping retards reinfection.

Production of fully dressed poultry as split broilers or fryers, or drawn fowl, packed in 30-pound frozen egg cans or in waxed fibre containers, designed for institutional trade can be a profitable part of the business. Some restaurants, hotels and other commercial institutions require certain specific sizes and types of poultry which can be packed to their specifications when the market is at the lower levels and stored for them in fully dressed frozen form. Regardless of common prejudices, this properly processed poultry, when handled right, will not be inferior to the fresh product in eating quality.

Canning Offers Possibilities

Possibilities for expansion in poultry consumption through production and sales of canned poultry are large. One small dressing firm in Florida, producing small cans of boned and cooked poultry as a sideline, sold 20,000 cans in its home city through the established retail stores. It has not been able to meet the demand for its product from other cities. Yet it has produced only small cans of chicken for use in making creamed chicken, sandwiches and light meals for mid-week use. Equipment for canning is inexpensive. For heavy volume operation it may be rented from the can manufacturer at low cost. As long as interstate shipment is not made and so long as sales are made in cities without government inspection requirements, the use of a government inspector is not necessary.

Unusual Ideas Suggested

Smoked turkeys have been produced commercially by a few specialized processors and sold in quantity for the past few years. The field is hardly scratched.

Boned, pickled and rolled turkey has been developed in experimental quantities with promising results. Smoked guinea fowl are being sold by at least one commercial firm. Pickled and smoked geese are a common item on eastern kosher markets. Their palatability gives promise of a wide increase in demand.

There is a definite need for an industry-supported research program probably cooperating with government agencies, and representing the interests of producers, hatcheries, packers and marketing agencies in the development of additional outlets for poultry products.

A broad program should be aimed at extending the knowledge of marketing poultry with high "eating quality," the development of the uses of by-products of evisceration such as head, feet and intestines, as well as glandular products. A program of that type, while slow and gradual in development of dollars and cents results, is necessary in assuring the important poultry industry success in the battle for a rightful place on the dinner tables of the nation.

A college professor, admitting some of his ideas visionary, tells . . .

What I Would Do If I Were Running a Commercial Hatchery

By Lewis W. Taylor
University of California

Condensed from a Talk

IF I were a hatcheryman, I would hope to be in the business for the rest of my working life. I would try to be successful not for the purpose of an early retirement, but for an assurance of continued operation of the enterprise. From this viewpoint, opportunity for immediate profit might be less desirable than a sounder program built on a long-time outlook.

Emphasis on Quality

Eventual success with a hatchery is more dependent upon quality than quantity of output. The need for improving quality is continual. Even the best breeders and hatcherymen can not feel they have reached the ultimate in the perfection of their stock.

In improving my stock, I would desire to benefit directly by improved results on my own breeding farm with the commercial units of birds raised there as a business proposition. I doubt that many of us could be quite as deeply interested in a program for flock improvement if we had no flock of our own on which to measure results and get the satisfaction of improved returns. The latter provides a selfish motive in the satisfaction of which we probably would be stimulated to handle our breeding program for measurably improved results. As a hatcheryman, then, I would look forward to profitable returns both from the hatchery and from the poultry ranch.

Starting from a small beginning (as I would have to do) financial stability would be important. The first problem would be to get the poultry plant and a small hatchery in order, operating as a breeder hatchery, before undertaking any expansion to include the association of multiplier flocks and an expansion of the hatchery sales to include stock produced on other than my own ranch.

Eventually, the operations of the

Presented at Annual Meeting of the California Baby Chick Association, Petaluma, Calif., June 15, 1939 business should be limited to the point where the breed or breeds raised still could be conscientiously improved. To me this seems to eliminate the question of branch hatcheries operating in a chain for the purpose of obtaining a vast volume of sales. The breeding program, I am sure, has to be centralized; the same should be true of the hatchery business. There should be no top-heavy organization.

Production of Quality Stock

Being a geneticist, I should want to have a pedigree breeding program on my own ranch. If I were not trained for handling this difficult work, I would surely depend on a carefully selected pedigree breeder as a source of stock. Experimental and practical results from all over the country testify to the benefits obtainable from a sound program of progeny testing in the hands of a capable pedigree breeder. This phase would represent the apex of the organization; the point of origin of superior stock for the improvement of all other phases of the enterprise such as cooperating multiplier flocks, hatchery sales, and multiplier and commercial stock on my own ranch.

Culling Would Be Severe

A rigid selection program for non-pedigreed, multiplier flocks under the control of a flock supervisor employed by the hatchery would be necessary. I am of the opinion that much more can be accomplished here than has been in the past. We have not been sufficiently severe in culling birds for breeding purposes in multiplier flocks. We have not handled our untrapped potential breeders often enough in the first year of their lay to enable adequate elimination of individuals showing defects in production or livability.

Here I would propose continual elimination of undersized and poorly developed individuals during the brooding and rearing period, then a special culling at 5 to 6 months of age to remove the remaining undeveloped or sick birds. About 7 months of age, a culling to remove late maturing birds from any possible future use as breeders would be made. Again at the period of the year when the greatest amount of winter pausing is evident, another culling should remove the non-laying, molting pullets from the flock of potential breeders. If possible a short period of trapnesting in the late winter or early spring would be used to eliminate birds laying at a low rate or producing small, off-colored or poorly shaped eggs. Broody birds would be removed. In the late summer and fall non-persistent, early-molting birds and those in poor physical condition would be removed as commonly practiced today.

As a result of this series of eliminations, average flocks (160-175 eggs hen-day average production) usually

will qualify for breeding only from 10 to 15 per cent of the initial number of pullets. This is a very severe and costly program, but there is reason to believe it will be much more effective than any program which fails to eliminate as high a proportion of the average multiplier's flock.

Disease Prevention

Disease control and sanitation procedure in both breeding and multiplier types of flocks is today recognized as a necessary part of the production of quality stock. The conduct of testing programs should be under the direct supervision of the hatchery or, preferably, an official state agency, as a service and responsibility of the hatchery.

In both types of flocks, new stock, whenever introduced, should be acquired in the form of hatching eggs or baby chicks. Ample evidence of transfer of communicable diseases by adult stock exists; today, no reasonably healthy flock should be exposed to the introduction of breeding males or other adult stock from ranches which may have experienced epidemic or chronic disease conditions known to be transmitted by healthy carriers.

With the increasing need for better livability in commercial and breeding flocks, the use of older hens for breeding, especially in multiplier flocks, is of greater importance than ever before. In pedigreed flocks selection for livability may be accomplished by choosing superior families. In non-pedigreed flocks, livability selection can only occur by natural elimination of weaker birds. In the flocks I would hope to reach the point eventually where only hens and cocks over 18 months of age would be used for production of commercial quality chicks.

In the hatchery, provision would be made for equipment to clean and disinfect removable incubator equipment. A regular program of machine disinfection, effective in the control of several diseases commonly spread in the incubator, would be used during the progress of the hatch.

Since the nutrition of breeding birds is an important factor in determining hatchability of eggs, owners of multiplier flocks should be required to feed rations meeting the approval of the hatchery operator.

Dividends for Flock Owners

One further point in the relations with owners of multiplying flocks relates to the way in which hatching eggs would be purchased. In addition to a flat guarantee of a basic price for the hatching eggs, I would attempt to use a system of season dividends, to be paid to multipliers whose flocks exceeded a minimum requirement for hatchability of eggs supplied and whose pullet flocks (not used for breeding) exceeded a required minimum level of egg production and had less than a maximum stated percentage of mortality and culls. To secure the required information, the hatchery would collect the data on hatchability and the flock owner would keep flock efficiency records on his plant under the inspection of the supervisor.

Choice of Breed

In California I would expect the commercial egg producer to remain the dominant factor in our industry, so I would choose the S. C. White Leghorn as the first variety for the plant and hatchery. Breeds utilized for both fryer and egg production will be subject at different times to expansion and contraction in demand. There is a very important opportunity for real breeding effort here in selection for rapid and efficient growth as well as for high egg production. If more than one breed were chosen, one of the following varieties would be selected: Barred or White Plymouth Rock, Rhode Island Red, or New Hampshire.

In my opinion it is almost impossible for any organization — no matter how well equipped—to breed effectively more than two varieties. I would expect to limit my operations to two varieties at most, starting with the second only after a good progress had been obtained with the first.

Separate Hatcher Preferred

Incubator equipment manufacturers today offer a wide variety of efficient types of machines. On general principles I would prefer to use a type which provides either a separate hatcher or separate hatching compartments where both temperature and humidity may be varied for best hatching results without affecting the physical conditions for eggs in earlier stages of incubation. It would be important to have uniform, interchangeable equipment so that eggs could be readily shifted from incubating to hatching compartments or machines.

The incubator building should be cheaply air-conditioned and provided with temperature and humidity controls. Chick storage and brooding facilities should be provided in a separate building to aid in the control of disease, and be restricted in use by the practice of setting eggs only to the extent of orders at hand.

General Policies

Other matters of policy in the hatchery which would seem desirable would involve: (1) no custom hatching, (2) all lots of eggs incubated with complete record of chick output, (3) records of chick sales traceable to the flock producing the hatching eggs and (4) owners of multiplier flocks could elect to stock their plants (excepting breeding males) with chicks from eggs produced on their own ranch.

By now, you probably have decided that what I have outlined is a mixture of ancient ideas with visionary impracticalities. I have given some recommendations, however, which are based on experimental work but not as yet, to the best of my knowledge, on practical trial. However, these principles have never been shown to be impractical.

Watch Beak Color in Chicks and Growing Stock

You no doubt have heard how foresters can look at the rings of a tree and tell not only the age of the tree, but whether the various years were wet or dry and warm or cold years. Unfortunately, chicks do not develop similar rings to tell us their weekly history, but in all yellow skin breeds the beaks indicate fairly accurately the well-being of the bird for at least 30 days.

A chicken's beak grows off the end just as your finger nails do. If something is seriously interfering with the digestion, the beak becomes white or flesh color at the base or next to the head. The longer this condition exists, the greater the extent of white or flesh color on the beak. As soon as the digestive disturbance is eliminated, the yellow in the beak returns next to the head.

Every poultryman should watch the color of the beaks of his young stock closely. As long as they are yellow all over, he can be relatively sure that digestion is normal. When the tell-tale white starts to appear at the base of the beak, he should immediately locate the cause and get busy to correct it. Over-feeding, crowding, high temperatures, coccidiosis, and intestinal injuries will remove the color; consequently, watching the beak color is one of the best guages you have in avoiding trouble.

—From "Follow Ful-O-Pep Save-on-Feed Plan," Copyrighted, 1940, The Quaker Oats Company.

“ PEOPLE are asking why dogs should have foods while productive poultry are starving. I think I was the first to mention that dogs might become a serious menace when I referred to having met a man with a bunch of sheepdogs. I met them again the other day, and they looked sleek and well, and their owner assured me that things were not too bad.

I would be the last to advocate depriving anyone of a loved pet, whether cat or dog; but it does touch me on a weakspot when I see half a dozen great dogs exercising on the common, realizing that they must consume as much food as a hundred Leghorn hens, and produce nothing for human consumption.

—From "Without Fear or Favor," Eggs, London, England, Jan. 17, 1940.

Judging Breeders by the Progeny Test

By F. B. Hutt
Cornell University

Condensed from American Poultry Journal

IN recent times, poultrymen have had to recognize that it is not merely the number of eggs produced that counts but also the size of those eggs, their hatchability, and in turn the viability of the chicks produced both as chicks and as adults. This means that the trap-nest record tells only a small part of the story, so far as the value of the breeding bird is concerned. That value can only be determined by the progeny test.

Some interesting differences between females with respect to their breeding ability are shown in Table 1. Data are given for six females that were mated to the same male. Male C2901, who headed this pen, had a good pedigree and looked well. It was hoped that he would produce daughters capable of laying well and surviving for at least one full laying year. However, up to 500 days of age, when the test was completed, this male had lost 57 per cent of his 77 daughters by these six hens.

It will be noticed that one hen who had a 277-egg record in her first year produced 15 daughters, every one of which died before the end of the 500-day test period. In striking contrast, the best breeder of the lot turned out to be B994, who had 17 daughters on test and lost only one of them. Of the 15 daughters of the 277-egg hen, no less than 10 died of paralysis and tumors. Other families also lost a considerable number with these same conditions. B1537 lost seven of her 10 daughters before January 1. In the case of B994, however, the single daughter lost had nothing more serious than bumble foot.

Table 1. Progeny tests for six females mated to male C2901

Female leg band	Egg-record 1st year	Daughters banded	Average eggs per daughter to April 1st	Mortality to 500 days number	per cent
B 478	301	13	125	9	64.6
B 291	263	8	125	3	37.5
B 994	207	17	117	1	5.8
B1537	204	10	90	8	80.0
B2013	269	14	99	8	57.1
B2058	277	15	74	15	100.0
Totals		77		44	57.0

American Poultry Journal, 536 So. Clark St., Chicago, Ill.
(American Poultry Journal, Jan. 1940)

Table 2. Progeny tests for two females from each of four breeding pens. Each pair was mated to a different male, but both members of any pair were mated to the same male.

	Egg record 1st year	Mortality per cent	Daughters' tests to 500 days Average eggs	number
A	206	22.2	127	(14)*
B	209	66.6	101	(4)
C	232	22.2	161	(14)
D	291	70.0	156	(5)
E	238	80.0	193	(2)
F	209	26.6	172	(11)
G	194	77.7	180	(4)
H	246	21.5	177	(15)

* The numbers in parentheses give the number of daughters surviving at 500 days of age and the average egg production for the family is based on that number.

Some poultrymen might have excluded from the breeding pen the two hens with records of only 207 and 204 eggs in their first year. Actually, the progeny test showed that one of these birds was the most desirable in the whole breeding pen. The average egg production of the daughters in the different families is given up to April 1. That period is used instead of a longer one because some of the families had lost nearly all of the daughters by the end of the 500-day test period and averages of egg production at that time would be based on too small a number of daughters to mean much. It is true that the daughters of B994 had not the highest records, but in comparison with the other breeders in the pen the average for her daughters of 117 eggs was extremely creditable, when coupled with the fact that only one pullet died in this family, making a mortality rate of less than 6 per cent. The progeny test showed B994 to be the most valuable female in the breeding pen.

It is interesting to note that the progeny of the 207-egg hen had a higher average egg production to April 1 than did the daughters of the 269-egg hen of the 277-egg hen. Similar tests are shown in Table 2, where from four breeding pens selected at random, two females from each pen are compared. These examples are enough to show that the true value of these breeders could be recognized only by testing the daughters.

A and B in Table 2 were both mated to the same male and had similar egg records, but one lost three times as many daughters as the other. Comparison of C and D shows that the better layer of the two not only lost 70 per cent of her daughters but also had fewer eggs per daughter than did the 232-egg hen with whom the comparison is made. So far as E and F are concerned, the better layer had much the higher mortality rate in her progeny, although her two surviving daughters had a higher average egg production (193 eggs) than did the 11 daughters surviving from the other hen. Most poultrymen would rather have the family with the slightly lower average egg record than the one in which 80 per cent died.

Don't Judge by Trapnest Record

It must not be assumed from the foregoing examples that hens with high records are more likely to produce daughters in which high mortality rates will prevail. This is not the case. A comparison of G and H shows that the latter had the higher egg record herself, a much lower mortality among her progeny, and had 15 daughters finish the test with an average of 177 eggs per daughter. This is not quite so high as for the other family, but is much to be preferred because it is based upon a larger number of daughters.

What about the male? From the earliest days of his experience with poultry, the writer can recall being told to select for breeding the males that show the most "constitutional vigor." This was supposedly measured by the brightness of the eye, by the amount of red showing in the shanks, by the shape of the head and body, as well as by general belligerency. Unfortunately, however, many a male that by these standards might head the class in February is dead at the end of May, and there is no evidence whatever that those appearing the most vigorous transmit the greatest viability to their progeny. After all we do not value the breeding male so much for his own personal appearance or his own pedigree as for the hope that he will produce offspring as good as himself or better.

Beauty Only Skin Deep

Many examples could be chosen from our records to show that males of equal pedigree and equally good in appearance are found to have decidedly different values when their merits are measured by the progeny test. Two males in particular were used at this experiment station in 1937. One lost 61 per cent of his daughters from housing time to 500 days of age, and those that survived had an average production of 130 eggs per pullet. The other bird lost only 34 per cent of his daughters, and the survivors had an average production of 184 eggs per pullet in the same test period. No one can tell by looking at these two birds which has the better record, but the progeny test shows which male is the better bird.

Progeny Testing Means Work

To do a complete progeny test of both females and males requires a great deal of record keeping, especially in these days when records of egg production, hatchability, mortality on range, mortality in the laying house, and egg size are necessary. It is doubtful if many poultrymen would be justified in the expense and time required for complete progeny tests unless they are selling breeding stock of the highest grade at prices sufficiently good to warrant such a program.

However, a partial progeny test, considering the sires only, can be made by toe-punching separately the chicks from every male and comparing adequate samples of pullets from each sire. Even where the breeder is not trapnesting, this can still be done with respect to mortality, so that the breeder keeps track of the number of pullets dying in the offspring of each male, and uses for breeding only those males having the lowest mortality in their progeny. If part-time trapnesting be combined with such a scheme, a measure of egg production and of egg size can also be obtained.

Extent of Dressed Poultry Inspection

According to C. E. Edmunds, D.V.S., Supervising Inspector of Dressed Poultry Inspection in Chicago (Amer. Jour. Pub. Health, Vol. 29, No. 11, Nov., 1939, pp. 1239-1243), there were government inspected in the United States during the period of a year 43,550,124 pounds of dressed poultry. Of these, 743,777 pounds were condemned as unfit for food. The causes for condemnation included avian tuberculosis, septicemia, emaciation, decomposition, peritonitis, tumors, leukemia, abscesses and other conditions. Tuberculosis exceeded all other causes.

It was deemed important that the American housewife, who is greatly interested in promoting the health and well-being of her family, should insist, when making purchases of either canned poultry products or fully eviscerated poultry, that they show identification of having been government inspected.

—Lederle Veterinary Bulletin, Jan.-Feb. 1940.

¶¶ MRS. GEORGE C. BAUER, a Greeley, Colorado, farmer's wife, fears the worst, according to a newspaper account. She reported to the sheriff that her flock of 30 guinea hens is missing and noted that they disappeared just when the pheasant hunting season opened.

POULTRY RESEARCH

Artificial Light for Breeders

Artificial light for breeding flocks, and its effect on health and performance of the progeny has been the subject of an exhaustive study by O. Bartsch, editor of the German Archive of Poultry Science. He concludes (Vol. 13, Nos. 10-11, 39, of the before mentioned publication) that the use of lights had no influence upon hatchability, upon health of the chicks produced nor upon their production as pullets or yearlings.

The lighted groups tended to produce eggs of somewhat lower fertility. In the absence of the necessary detailed statistics, it is impossible to state whether this reduction in average fertility of 4 per cent as compared with the unlighted flocks is of experimental significance. It is interesting to note that the highest death rate during the pullet year amounted to only 9.4 per cent.

—Carl H. Schroeder, Everybodys Poultry Magazine, Feb. 1940.

Artificial Lights for Layers

A study of the effect of artificial illumination on egg production, conducted at the University of Illinois by B. R. Burmester, H. M. Scott, L. E. Card and Elmer Roberts, was reported in the Annual Report of the Illinois Agricultural Experiment Station for 1936-37.

Forty-eight White Leghorn pullets confined to individual laying cages in a room which admitted no natural daylight were exposed to varying intensities of artificial illumination during both 12-hour and 24-hour periods. With alternating 12-hour periods of light and darkness, egg laying occurred only during the light period, irrespective of whether that period coincided with the solar day or the solar night.

When a change was made to continuous light, the hens laid eggs during both the solar day and the solar night. This response did not occur until the fifth day, but after 10 days of continuous light, egg production was about evenly divided between night and day. Percentage of hens induced to lay during the solar night tended to decline as the intensity of illumination was lowered; time required for hens to reach the point of laying half their eggs during the solar night was greater when total illumination was low.

Hen Cages vs. Floor Management

Hen cages yielded virtually identical results as comparable flocks kept in confinement, on a wood,

litter-covered floor. J. Bennett of the British National Institute of Poultry Industry records the gross results of this trial in the Harper Adams Utility Poultry Journal (Vol. 24, 10).

The average production during the test period of 48 weeks was 202 eggs in the batteries, 196 eggs on the floor. The death rate was 21 and 23 per cent, respectively. Contrary to most observations, the birds in batteries consumed slightly more feed. Slowly maturing birds came into production more quickly in batteries.

—Carl H. Schroeder, Everybodys Poultry Magazine, Feb. 1940.

Egg Yield per Hen and Mortality Affect Flock Income

Probably no other one factor influences egg costs and flock income more than the eggs laid by each hen. Almost without exception, high cost of production accompanies low egg yield. This conclusion was reached by R. H. Wilcox, E. B. Colegrove and L. E. Card of the University of Illinois (reported in Annual Report of the Illinois Agricultural Experiment Station for 1936-37), after studying Illinois farm records for 1936.

Flocks that averaged 160 or more eggs per bird produced eggs at 14 cents a dozen, while in flocks where birds averaged less than 100 eggs a year, costs averaged 29 cents a dozen. The high producing hens consumed 95 pounds of feed per bird during the year, while low producers consumed 70 pounds each, but the high producers averaged only 6.9 pounds of feed per dozen eggs, whereas low producers used 9.6 pounds of feed per dozen eggs.

Average cost of producing eggs on all farms was 20 cents a dozen: 11.1 cents for feed, 3.6 cents for mortality and depreciation, 2.4 cents for labor, 1.4 cents for interest on capital, .8 cents for other costs, and .7 cents for building and equipment.

Hen mortality in Illinois during the past five years averaged about 25 per cent a year. In flocks where less than 15 per cent of the layers died, profits averaged 88 cents more per hen than in flocks in which 35 per cent of the hens died.

Size of flocks apparently had no influence on number of eggs produced per hen.

Economizing With Concentrate May Result in Deficiency

Poultry raisers who use protein concentrates in combination with home-grown grains should mix them in the proper proportions.

An epidemic of curled toes in chicks 3 weeks old in one area in Wisconsin was diagnosed by E. B. Hart, C. A. Elvehjem and P. H. Phillips, Wisconsin Agricultural Experiment Station, in Bul. 446 as a riboflavin deficiency caused by failure to use enough of the concentrate along with the grain.

Soybean oilmeal was the principal source of protein in the concentrate; but it included milk, meat scraps and alfalfa meal, all of which would have supplied sufficient riboflavin if the concentrate had been fed in proper proportions.

Effect of Feed on Mortality Due to Pullorum Disease

Realizing that environmental factors may influence resistance and susceptibility to infections in many diseases, Elmer Roberts, L. E. Card and J. M. Severens conducted tests at the University of Illinois (reported in Annual Report of Illinois Agricultural Experiment Station for 1936-37), to show that one kind of feed may cause a greater mortality than another, both among chicks inoculated with the pullorum organism and among non-inoculated chicks.

In one test 80.5 per cent of the inoculated chicks fed a chick mash survived, while only 19.7 per cent of those fed a laying mash survived. Among non-inoculated chicks, 98.1 per cent of those fed the chick mash lived, while 71.8 per cent of those fed the laying mash survived. In a second test 88 per cent of the inoculated chicks fed a chick mash survived, and only 42.2 per cent of chicks fed a laying mash survived. Among non-inoculated chicks in this second test 96.7 per cent of those fed the chick mash lived, compared with 82.2 per cent of those fed a laying mash. The two feeds differed in proportions of nutritive materials and in amounts of fibrous material.

Eye Color and Death Rate

Eye color, death rate and production is the title of a paper by Dr. J. B. van der Meulen, in the Hollandish Landbouwkundig Tigdschrift (Vol. 50, 38, 868). Investigating 406 Leghorns of two different strains, he reports that livability and production are lower among hens with abnormal color of eyes or shape of pupils. One normal and one abnormal eye in the same bird lowers production almost as much as two abnormal eyes, but has less influence on death rate. Eye color has no effect on feed consumption. Future average production may be increased and death rate decreased by the removal of all birds with eye abnormalities.

—Carl H. Schroeder, Everybodys Poultry Magazine, Feb. 1940.

Two Forms of Coryza

Coryza is the bane of battery brooder operators. To a lesser extent this form of cold also occurs among birds of all ages kept in a more traditional environment, such as on a litter covered floor.

J. B. Nelson of the Rockefeller Institute of Medical Research, in the Journal of Experimental Medicine (Vols. 63 & 64) reports the existence of at least two forms of this catarrhal inflammation of the nasal mucous membranes, attended by a discharge of water and mucus from nostrils and eyes. These two forms differ in the length of the so-called incubation period of the infection, requiring in one never more than three days, in the other, never less than nine days. Haemophilus gallinarum was always found with coryza of rapid onset, never with coryza of slow onset.

The form of coryza characterized by a slow onset could be produced in eggs, if inoculation took place before the fourth day. The organisms were never found in embryos, but when these cocco-bacilliform bodies were introduced into the nasal passages of healthy chicks, virtually all developed coryza, but only one-half of the number of infected chicks showed external symptoms.

—Carl H. Schroeder, Everybodys Poultry Magazine, Jan., 1940.

Navel Disease

Navel Disease (omphalitis) has been studied bacteriologically by the Bavarian Institute of Veterinary Police. The Pullorum organism, coli bacillus, and a staphylococcus were considered to be responsible for many omphalitis cases. These germs were found chiefly in the yolk sac. It is concluded that the egg itself must be suspected as one of the causes of navel infection.

—Carl H. Schroeder, Everybodys Poultry Magazine, Feb. 1940.

Producing Strains of Chickens Resistant to Pullorum Disease

To produce strains of chickens combining hereditary resistance to pullorum disease with other desirable qualities such as high egg production, fertility and hatchability, Elmer Roberts and L. E. Card of the University of Illinois, obtained hatching eggs from several outstanding flocks in the country. Chicks hatched were then exposed to the organism causing pullorum. At the end of three weeks, only 1.1 per cent of the chicks from one of eight flocks remained alive, while 85.8 per cent of the chicks from another flock lived.

The investigators report (Annual Report of the Illinois Agricultural Experiment Station for 1936-37) that progeny of the resistant stock, when exposed to the disease, showed a survival of 81.6 per cent, while susceptible stock had a survival of only 49.3 per cent.

Males from unselected stock were also tested by mating to susceptible females. Survival of their progeny was 48.8 per cent, and the more resistant of the males were to be saved for use in the breeding flock.

Unselected females also were subjected to the same kind of test and the hens whose progeny showed them to be most resistant to pullorum were to be saved for developing the pullorum-resistant flock.

Pullorum Tests for Turkeys Compared for Their Efficiency

The whole blood test was found to be 46.9 per cent efficient, while the tube agglutination test gave an accuracy of 84.8 per cent, in determining the presence of pullorum disease in turkeys, according to the results of tests reported by W. R. Hinshaw, E. E. Jones, J. R. Harr and W. E. Niemeyer, all of California, in The Cornell Veterinarian, Jan. 1940 (Vol. 30, No. 1).

Some 7,714 tests were made on turkeys in 13 flocks. The combined tests detected 467 reactors. Of these, 31.7 per cent were positive to both tests; 53.1 per cent were positive to the tube test only; and 15.2 per cent were positive to the whole blood test only.

Autopsies were performed on 241 turkeys which had reacted, and the pullorum disease organism was isolated in 72 turkeys. All of these 72 turkeys had reacted to the tube test, but only 47.3 had reacted to the whole blood method.

Since the whole blood test is only about one-half as efficient as the tube test, the authors conclude that the whole blood test will have to be improved before it can be used as a reliable means of detecting pullorum disease in turkeys.

Sinusitis in Turkeys

Sinusitis in turkeys may be treated by irrigating the affected sinuses with a mild sodium bicarbonate solution, then injecting two drops of an ephedrinated inhalant, or two drops of a 5 per cent silver nitrate solution, according to L. D. Frederick, Swift and Company, in Veterinary Medicine, Jan. 1940 (Vol. 35, No. 1).

Fowl Typhoid in Turkey Poults

The isolation in week-old turkey poults of Shigella gallinarum organisms causing fowl typhoid, is described by E. P. Johnson and Morris Pollard of Virginia Polytechnic Institute in the Journal of the American Veterinary Medical Association for February 1940.

After fowl typhoid was diagnosed in the baby poults, 2,821 adult birds on the same farm were bled and the serum was tested with both gallinarum and pullorum antigen. All positive reactors to either disease were immediately removed from the flock. Mortality of the adult birds, however, had been very low.

Fowl typhoid later was found to kill many older poults on this and other farms in the same county. Highest mortality occurred in birds 6 to 10 weeks old, but severe losses also occurred in birds up to 14 weeks of age. The organism recovered in this outbreak was highly virulent for both chickens and turkeys. Findings indicated that there is a great variation in the virulence of various strains of the fowl typhoid organism, or that certain strains may increase markedly in virulence as many birds become affected, for the outbreak was of a chronic nature in adult birds with the organism involved apparently rather weak, while in the poults, the course was acute.

Lead Poisoning in Wild Ducks

Lead poisoning from shot scooped up from the bottom of shallow lakes in Minnesota is said to have been responsible for the loss of thousands of wild ducks, according to the weekly News Letter of the University of Minnesota.

Of a group of 157 ducks examined, all but 20 had pieces of shot in the gizzard. As high as 21 were found in a single bird, but the average was 2.56 per bird. The shot are ground up in the gizzard, absorbed by the blood stream and cause a form of muscular paralysis which interferes with normal digestion. As few as two or three pieces of shot may cause a bird to weaken and die.

Minnesota scientists have developed a non-toxic type of pellet that disintegrates fairly rapidly in water, and it is now being tested by ammunition manufacturers.

New Duck Disease in Illinois

A new duck disease which has been observed on Illinois farms is described in the Annual Report of the Illinois Agricultural Experiment Station for 1936-37. This disease was first noted on Long Island duck farms by J. M. Hendrickson and K. F. Hilbert of New York State Veterinary College, Farmingdale, L. I., N. Y.

Ducklings naturally affected with this malady show weakness, emaciation and loss of appetite. The disease is acute and fatal. On one Illinois farm a mortality of 4,000 ducks was experienced in 1937. It has many features of cholera in ducks, but is caused by the specific micro-organism, Pfeifferella anatipestifer. Diagnosis of this disease can be made only by laboratory examination.

The disease was experimentally reproduced in healthy ducks at the Illinois Experiment Station with cultures propagated from naturally affected birds. The seasonal occurrence of it suggests that factors which lower the vitality of ducklings, such as chilling or overheating, may help in the development and spread of it.

It was observed that inoculation of vaccine properly prepared and administered produced a resistance to the disease, and it was suggested that this may merit further trial as a form of good management.

Personality of Hens

You often hear people say that hens are the most stupid things on a farm. If you try to drive a hen one way, she is certain to try to go the other. But leaving aside the question of brains, hens have something which tells them whether they are being well treated or not.

Most people who enjoy working with poultry will tell you that hens do have a personality. Certain old roosters are distinguished for theirs. I recall one old Barred Rock fellow on the farm at Hancock, N. H., who thought it was a call to battle everytime a human being came in sight. The women folks always carried a club when they went to the hen house. If a man had a good stout boot on his foot, he could keep Julius Caesar away by repeatedly kicking him. But old Julius hated to give up. It was never safe to take your eyes off him for a second.

One time I had about 200 Rhode Island Reds—just before I went away to college. An army veteran who wanted to learn poultry keeping was to take care of the hens. All that summer one beautiful pullet had been a special pet. She hung around me in the yard, and would fly onto my knee if I sat down. She had matured and was laying when I left the farm about mid-September, 1922. When I returned at the Thanksgiving holiday, and went up to the hen house, sure enough, "Matilda" remembered me. Or I think she did! She certainly acted that way.

Talk cheerily to the hens. They like companionship and attention! If you haven't made a practice of this, try it. The hens will talk right back! I remember one elderly poultry farmer in southern New Hampshire years ago who claimed he could go into his flock and "talk" a few extra eggs from them. It's fun to talk to them and watch and listen as they start singing and scratching. Perhaps our hens are not brainy, but they are rather temperamental.

—H.S.P., Rural New Yorker, Dec. 2, 1939.

A WHITE cock was worshipped by the Pythagoreans, a religious and philosophical sect of ancient Greese.

—Carl H. Schroeder, Poultry Tribune, Feb., 1940.

On breeder management depends . . .

Egg Fertility in Turkeys

Condensed from Norbest Turkey News

THE most important and variable single factor in successful turkey egg production is fertility. Most breeders have the secret of production learned well enough that they get a reasonable number of eggs; but to get fertile eggs, so their customers, the hatcherymen, will have something to sell is another matter entirely.

By the use of sheds and lights, combined with proper feeding, it is possible to get turkey eggs about any time of the year they are wanted. In the more favorable climatic conditions of the west, even the use of sheds and lights is unnecessary. Perhaps a majority of those who used lights the past few years are inclined to think there was not too good fertility. Whether this was due to the lights or factors of management that went into the picture, is a moot question. Some few growers report satisfactory fertility and production under light; which leads one to believe it largely a matter of management.

Conditioning Birds

Again we have a wide difference of opinion as to the condition that should be maintained in the breeding hens before production. Certain growers believe the hens should be thinned down until a few weeks before eggs are desired, then given all the feed they can take, rather like flushing a bunch of ewes. On the other hand, other growers claim the hens cannot get too much flesh; that after production starts they must needs have reserve flesh and strength to permit a heavy production.

When to Mate

When to put the toms in with the hens is another topic of discussion, some claiming the toms should be put in early, while others prefer to wait until just before production. So it goes, a host of varying ideas, difficult to adjust to each other, yet the whole forming more or less of a defined pattern which may be summed up more or less as follows:

1. Breeding hens should be maintained in heavy flesh, but not necessarily overloaded with fat.
2. Breeding hens should always be saddled.
3. Lights unquestionably affect time of egg production. To get fertility with this forced production is a matter of management.
4. Handling the toms depends on arrangements and facilities of the

Northwestern Turkey Growers Association, Salt Lake City, Utah
(Norbest Turkey News, Jan. 1940)

individual turkey farm.

5. A proper breeders mash has a good deal to do with both fertility and hatchability.

6. Plenty of green feed, either fresh greens or good alfalfa hay, forms an important ingredient of any ration.

Eggs Used in Production of Typhus Vaccine

Two new methods have been developed in the United States during the past two years for the mass production of a vaccine for typhus fever of the European type, according to Science, official organ of the American Association for the Advancement of Science.

Typhus fever is caused by a virus-like micro-organism known as rickettsia. Before the development of these new methods, it was difficult to produce adequate quantities of vaccine to provide protection against the European type of this disease, which has been responsible for the greatest epidemics of typhus fever in Europe, especially during wartime.

One of the new methods was developed by Hans Zinsser, Harry Plotz, and John F. Enders at Harvard Medical School. It consists in growing the organisms on minced chick tissue from 10-day embryos spread on an agar surface. The second method, developed by H. R. Cox of the United States Public Health Service, consists in growing the organisms in the yolk sac of fertile hen eggs. By combining the two methods, a yield of vaccine much greater than that produced by either of them alone can be obtained.

THE MOST peculiar egg ever laid by an astonished hen is reported to be in possession of Mrs. J. S. Elliott, of San Jose, Calif. Eleven inches long and only one inch in diameter, the strange object found in the nest of a White Leghorn hen resembles a giant cigar more than anything else. Only it is white, shellless and yolkless, it is said. Mrs. Elliott says she is sure it is an egg, for she saw the hen get off it and cackle hysterically after one good look.

—Utah Poultry Co-operator, Jan. 1940.

ADRIAN, Hollywood's famed dress designer, keeps many unusual kinds of poultry solely for feathers for fancy hats and costumes.

—Carl H. Schroeder, Poultry Tribune, Feb., 1940.

Refuses to Grind Inferior Grains

Inferior grain makes an inferior ration, regardless of the material with which it is mixed. But once a batch of such feed has been tried and found wanting, the customer condemns both the supplement and the dealer who sells it.

Hal. C. Beasley, Reedsville, Ohio, feed dealer, has solved this problem by means of a grain-grading service. When a customer's offering does not pass inspection as to quality, Beasley refuses to mix it with a commercial supplement. Strict adherence to the rule has lost Beasley 11 customers during the past year, but has won 32 new ones. He has the confidence of the best farmers of his territory, and from these sources, sales of commercial feeds and supplements have been boosted more than 45 per cent.

"The average farmer," Beasley declares, "labors under the theory that a well-advertised commercial supplement should transform any home grown feed into a perfectly balanced ration. The best grain is sold on the market, and the odds and ends of what is left are brought to the feed dealer to be transformed into a ration for producing eggs, meat and butter fat. The dealer who always complies, gets a rousing reception — for a while. Then, eventually comes the widely circulated story about the bad batch of feed Farmer Jones got at so-and-so's.

"To eliminate this bad habit, and for the benefit of both the farmers and myself, I installed in one corner of my store, a table which is equipped with a common reading glass, a wire sieve, and a supply of shallow boxes or trays. When a customer arrives with grain to be ground and mixed with commercial supplements which I carry in stock I take out a generous sample and examine it under the glass. If it shows moldy, or contains a high percentage of weed-seeds and filth which is determined by sifting the sample, I reject the job and explain to the customer why I do so.

"The majority see the wisdom of my objection. Those who do not, go elsewhere, and eventually come back to me. Once they get the habit of providing grains worthy of the supplements, no further inducement is required to retain the business. It requires considerable nerve at the start to advise a customer that his grain is not worthy of a supplement but it means a saving in feed dollars."

—The Feed Bag, Jan. 1940.

IN NORTHERN IRELAND imported cereals are being sold only in the form of ready-mixed rations. The object is to economize their use, since by this method for every 30 tons of maize used 100 tons of balanced rations can be distributed.

—Poultry World, London, England, Dec. 29, 1939.

Diary of a Poultryman

By P. S. White
Egg Farmer, Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

Feb. 1 – It was a great vacation, the two days of Farmer's Week at Ohio State University. Kid White and I listened to the lectures, discussions and arguments both days. We both built a few air castles and made a few resolutions about our work in the future. But home certainly did look good when we pulled in our own driveway.

Yes, it is good to get away from home, but it is better to come back home. After all, home to us is far more than just a place to eat and sleep. It is where we live; where we work; where we raise our children; where all of our interests, heart, body and soul, are located. Yes, home to us is all that the word implies.

Feb. 3–Ralph Treat, Ralph Sheppard, and I held a little Farmer's Week of our own this morning when I delivered the eggs. We hashed the whole thing over again and as per usual arrived at no definite conclusion. We all did agree that the producers should put out a better grade egg in the future.

But the point is, how are we to get the idea across? Tom, Dick and Harry are hard to convince that a change in methods of production and better care of the product will net them more money. They admit that it is a fact, but they also hate to get out of the old rut.

Feb. 4 – We managed to get through the cleaning today in pretty good shape. Had to use the ice hoe in the east house, but by the time we reached the other houses, the droppings had loosened. This cold weather has been rather hard on some of these birds that did not have a very strong constitution. This is a technical explanation of a so-called running gear. They will crop out, and when we find them, it is the furnace for them. Dead men don't tell tales, and incinerated birds don't spread anything.

Feb. 7 – We have started a new schedule on cleaning. Instead of cleaning all the boards on one day, we are going to clean part of the houses on Tuesday or Wednesday and the remaining Friday or Saturday. If the weather should happen to be bad on Tuesday, we will clean on Wednesday. The same applies to the latter part of the week. I work the same scheme on delivering the eggs to the auction. If it is bad weather on Tuesday, I have until Wednesday night to get them delivered.

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(Everybodys Poultry Magazine, February, 1940)

Feb. 8–Well, Harold and I had things all lined up to get a pile of work done today, and we didn't get anything accomplished. A visitor in the morning, one in the afternoon, one after supper. It was a great day for visitors. Along about this time of the year folks get all "het up" about the poultry business. Something gets in their blood, like pox gets in the blood stream of a bird. A bird breaks out with a great array of scabs, whereas folks manifest a wild enthusiasm. The results are about the same, both get the birds, at least temporarily. If the dose is severe, both have success.

Feb. 14 – I phoned the office of one of our local manufacturing plants regarding shavings. Yes, they had plenty. So I went tearing in town with the little truck. And there wasn't a shaving to be had. It was a good joke on me, worse than receiving a comic Valentine, one that isn't complimentary by any means.

The auction bookkeepers, Florence and Mildred, seem to think that double-yolk eggs make nice Valentines. At least that is what they said when I presented each with a carton of them today. I wonder what Old Man Dowling and Old Man Senff, fathers, not husbands of the girls, would think of me if those eggs would grade U. S. Rots. To spoil a man's breakfast with bad eggs would be worse than sending him an uncomplimentary Valentine. Yet I wonder how many producers spoil the consumer's breakfast by selling him eggs of poor quality.

Feb. 15 – What always seemed more or less of a joke to me is the fact that so many poultry producers seem to think that the city folks have to be educated to eat good eggs. Frankly, I have never seen anyone yet who relished bad eggs.

I just wonder what producers would think of putting on an individual campaign on their own farms for better interior egg quality. We have two campaigns going on this ranch at present, "The Society for the Prevention of Dirty Eggs," and "The Anti-Cracked Egg Association." Furthermore, we get results; today there were only 11 cracks. It narrows down to a few common sense ideas as gathering the eggs more carefully and keeping the nests in better repair.

Feb. 16 – And was it cold this morning? The thermometer said 6 below zero, and I will tell the world that is cold in this neck of the woods, especially when the wind sweeps down off of Lake Erie. Fortunately, and I'll say it was rare judgment on Harold's part, all the pipes were drained. How easy it is to open a drain cock and let the water run out of a pipe, to allow the water to follow the laws of nature and seek its level.

One of Donnie's ewes gave birth to twin lambs, but we lost one, the better one, of course. It always happens that way. Whenever I drop an egg it is always a large U. S. Special. I have never been known to drop a cracked egg.

Feb. 18—The three north houses were cleaned by noon and the manure distributed on the pasture. Grass ought to grow out there this year. There were 20 tons of droppings to the acre last year and there will be about 20 tons per acre this year. When we fertilize—we fertilize. It makes grass that one often reads about but seldom sees. If it burns out, the natives will have the laugh on me.

I had all the eggs packed by 6 o'clock, for I have to do some tall thinking tonight. I am supposed to make an after dinner speech at the banquet of the Northeastern Ohio Poultry Producers Association at Salem, Ohio, next Tuesday night.

Feb. 20 – I did some tearing around today in preparation for tomorrow, and especially tomorrow night. That is the big night over at Salem, Ohio, for the Northeastern Ohio Poultry Producers Association. A banquet, with all the fixings, soup to nuts, toastmaster and an after-dinner speaker. I have been given to understand that the speaker of the occasion is somewhat of a nut, too. Anyway, he happens to be me.

If that crowd is expecting to see me wearing a bat-winged collar; boiled shirt and a claw hammer coat, they will have another thought coming. I would feel more at home in a pair of overalls. I will have to take time out to think of something to say. It is very necessary, when one makes a speech, to have something to say. I have heard some after dinner speakers who talked a whole lot but didn't say anything.

Feb. 21—I conferred with the two Ralph's (Treat and Sheppard) when I took the eggs to the auction this morning. Ralph Sheppard, the egg inspector, is going over to Salem with me. He is going to represent our association. We will leave about 2 p.m. in his car. The reason we are going in his car is because it has a radio, which I do not have.

Feb. 22—I have been wondering all day if the Northeastern Ohio Poultry outfit will ever invite me over there again. I stopped during the so-called "address" to ask Charlie Moser, the manager of the

marketing association, if I was bearing down too hard.

I titled the talk, "Do you Know?" Rail fence philosophy. Do you know that if an egg is packed big end down the grade is very apt to be lost? Do you know that Shylock was a piker in comparison with a dry egg case? He demanded a pound of flesh, and didn't get it, but a dry egg case will extract a pound of water from the eggs in time.

Do you know that packing warm eggs in a warm case will lower the grade? Do you know that in order to train a dog one must have more brains than the dog? Do you know that quick cooling of eggs is essential to high interior quality? Yes, I have been wondering all day if they will ever invite me again. It is a poor policy to shake the tree if one doesn't like the peaches.

Feb. 23—Harold and I have been shelling corn during our spare time. It is new corn but it has been stored in the block house feed room and garage. Dry? Well, just about like the proverbial bone. I feed the corn in the sheller and Harold takes care of the shelled corn and the cobs. It is an all-time job for us both, all we can do while we are doing it. Every corn bin on the ranch is filled to capacity, so it won't be necessary to shell for a few days.

Feb. 27 – Tonight is one of the big nights down around the egg auction. It is the first term of the poultry school. I have been packing eggs between times during the day because I want to take them in when I go. For some reason or other, I just can't get away from that habit of making a pay load whenever I can. If I can get in there early enough, I will be able to put on a return load of empty cases.

I am chairman of the meeting, but I am afraid most of the students won't recognize me wearing store clothes and with my face shaved as slick as a peeled onion. If I would plaster my hair down with lard I am sure no one would recognize me.

Feb. 28—A little country boy like me simply can't stand it to eat a lunch of weiner and cheese sandwiches, drink three cups of black coffee and then sleep. It is the custom around this neck of the woods to serve a lunch at agricultural gatherings; to send folks home with something in the stomach if not in the head.

The food for thought was supplied by Dr. Bethke, who spoke on "Chick Rations," and Dr. Hook, who spoke on "Poultry Diseases." This was followed by a 40-minute question and answer period, the panel of which was composed by Dr. Bethke, Dr. Hook, Verne Chamberlin, answering production problems, and Ralph Sheppard answering questions pertaining to marketing. Each person, on entering, was given a card upon which to write questions. These cards were collected and I, as chairman, read and assigned the questions. They were answered at the rate of one every 36 seconds. Walter Shott, was the chef, supplying the where-with-all for the inner man.

How to Study Laying Test Reports

Few poultrymen really get all they might out of the egg laying tests, largely because they do not know just what to look for. Those of us who manage the tests are just as interested in benefiting those who buy stock as those who enter the competitions. In fact, I have stated on some occasions that I was not interested in receiving entries from those who were not interested in sending out stock that would make a profit for those who bought it.

When looking over reports from the different tests, you should pay special attention to the following records shown for breeders of the particular breed or variety in which you are interested.

1—Number of eggs laid. This is important, of course, for birds have to lay well to make a profit for the owner.

2—Size of eggs laid. This is necessary so that a decent price may be obtained for the eggs. This is shown in points on all contest reports. Choose a breeder whose record shows as many points as eggs, as this means a 24 oz. average or above for all eggs laid.

3 — Livability. This, according to my idea, is probably the most important factor and is shown on most reports. Hens must live well in order to make a profit, and we who run tests know that there is a vast difference in results shown over years of operation from various breeders in this respect. Do not base your selection on one year's performance, nor the results shown in one test. Look over the reports on several tests and over several years' time. It will certainly pay you.

—E. F. Stanton in Poultry Tribune, Feb. 1940.

IN THESE days of wars and rumors of wars—haven't you ever dreamed of a place where there was peace and security, where living was not a struggle but a lasting delight? Of course you have.

So has every man since time began. Always the same dream—sometimes he calls it Utopia—sometimes the Fountain of Youth—sometimes merely "That Little Chicken Farm."

—From Frank Capra-Columbia Picture "Lost Horizon."

Effect of Feed on Flesh and Eggs

By Harry W. Titus
U. S. Department of Agriculture

Excerpt from U.S.D.A. Bulletin

THE feed consumed by chickens may affect the flavor and market value of both the flesh and the eggs. At times the flesh of chickens may have an undesirable flavor described as fishy. Such a flavor has been found even when the chickens have consumed diets which did not contain either fish meal or oil, nevertheless, a fishy flavor when encountered often may be traced to the presence of fish products in the diet. For this reason, it is best to use only those fish meals which previously have been found not to cause a fishy flavor.

Some undesirable flavor found in the cooked flesh of chickens may be traced to the fact that the chickens were killed while there was still feed in their crops. To eliminate so far as possible the possibility of the flesh having an undesirable flavor, fishy or otherwise, three precautions should be taken: (1) Eliminate all fish products at least 2 weeks before the chickens are to be killed, (2) do not feed diets that contain rancid feedstuffs, and (3) withhold all feed from the chickens 12 to 16 hours before killing them.

Skin Color Affected

The color of the skin and flesh of chickens is primarily a breed characteristic, but it may be affected to some extent by the feed. If large quantities of yellow corn, corn-gluten meal, or alfalfa products are fed, there is a tendency for the skin and some of the fat immediately under the skin to become yellow. On some markets a preference is shown for chickens with yellow skin, but when it is desired to have the skin of the chickens as light in color as possible, yellow corn and green feed should be fed sparingly.

For Light Yolks—Confine Birds

In general, the color of the yolks of eggs may be controlled easily by feeding. If very light-colored yolks are desired, keep the chickens confined in the laying house or in bare yards and feed on a diet that contains little or no yellow corn and but little alfalfa or alfalfa-leaf meal. The richer shades of yellow may be obtained by feeding diets in which the chief cereal grain is yellow corn and in which there is 5 to 10 per cent of alfalfa products. Deep

Farmers' Bulletin No. 1841, "The Feeding of Chickens."
U. S. Department of Agriculture, Washington, D. C.

orange-red yolks may be obtained by feeding 0.5 to 2 per cent of ground pimento pepper or chili pepper. Cull peppers should be used because of their relative cheapness. An excessive intake of fresh green feed or green growing grass tends to cause a green-yellow or red-yellow color. If such eggs are placed in cold storage, a condition called grass rot may develop.

Cottonseed meal should not be used in feeding laying stock, if the eggs are to be marketed. This product tends to cause the yolks to have a mottled appearance and to acquire an undesirable dark color when the eggs are kept in cold storage for a few months. Some weeds of the same botanical family as the cotton plant, such as the common mallow, have a similar effect on yolk color and at times may cause the whites to have a pink tint.

Bright Tin Can Scares Crows from Poultry Yard

The first week in March, I put 300 White Leghorn chicks out in a clover patch close by the house. They did fine until the crows found them. Four days from the time we saw a crow fly off with one, they had taken 35. We tried to get a crow to hang up in a conspicuous place so they'd leave, but the crows were too smart.

A friend told us to hang up a bright tin can and that would make them leave. We made many holes in a bright half-pound cocoa can, and suspended it by a string from a pole we nailed to a post in the middle of the patch. That can went round and round, winding and unwinding the string. The sun shining on it made a brilliant reflection which made the superstitious crow afraid. Anyway, he didn't get any more of my chickens.

Some of my neighbors hang tin cans, old lard cans and old pieces of wire to rattle on their fence, clothes line, and posts in and near their chicken lots and never have crows or hawks bother their chickens.

—Mrs. Mary J. Jones, Poultry Tribune, Feb. 1940.

THE BOY SCOUT movement in many parts of Scotland is taking an active part in the "Back to the Land" move. The idea is for a troop of some 24 boys to club together to buy stock, and then take it in turn to perform the necessary work involved in their care and health. When the scheme develops, training and guidance will be sought from the Agricultural College in Scotland.

—Poultry World, London, England, Dec. 1, 1939.

Cannibalism and Prolapsus

By R. T. Parkhurst
Massachusetts State College

Reprinted from Featheredfax

CANNIBALISM and prolapsus are quite serious causes of mortality and losses in some poultry flocks. In the Massachusetts Agricultural Experiment Station flock, the figures show that the percentage of cannibalism has varied from 1.66 to 7 per cent.

There is a considerable fluctuation from year to year under the same system of housing and management for the birds. The indications are that cannibalism is of little importance in non-laying birds and that the losses from cannibalism were greatest in the late summer, while more birds were injured by pecking during the winter months.

Cannibalism may sometimes be a result of faulty management practices. The loss of birds and of egg production is of definite economic significance. The habit of cannibalism may begin in the chick stage, on range, or after pullets have been housed for some time. There is little doubt that the taste for feathers and blood is often developed in the growing chicks because of faulty management, and it has been observed here that cannibalism can be reduced to a minimum by letting the chicks out as near daylight as possible during the growing season.

Start Prevention With Chicks

To effectively prevent picking, a program should start with the baby chicks. As crowding is often a cause of the trouble, only two chicks to a square foot of floor space in the brooder house should be the rule. The temperature of the brooder house should be kept as cool as possible and still have the chicks comfortable. Chicks should also be kept busy and interested in their feed. The introduction of dry oats as part of the scratch ration as early as four weeks of age will often assist in reducing cannibalism. Cockerels should be removed as soon as they can be distinguished. It is also a good idea to put the pullets out into summer shelters at eight to ten weeks of age when weather permits and clean range is available.

Some poultrymen have gone to the extreme of darkening the coops with burlap or painting the window glass red. Experience in the Station flock would indicate that lack of crowding, abundant free range, and

Massachusetts State College, Amherst, Mass.
(Featheredfax, Jan. 1940)

letting chicks out very early in the morning (at daylight) act as a preventive of the trouble on the range.

Locate the Pickers Early

Cannibalism often starts just when the pullets begin to lay in the fall. Pullets with protruding, bloody cloaca and oviducts attract other birds and usually result in the victim being picked to death. It is a chronic picker, however, that causes the greatest losses in the flock and it is advisable to locate all pickers and either remove them, temporarily relieve the situation by trimming their beaks, or use mechanical devices to prevent them from further picking.

Some mechanical devices, although effective, may so adversely affect feed consumption as to cause loss in body weight and egg production, but usually there is a saving in time and money if they are put on immediately when an outbreak occurs.

Some suggestions in the prevention program are as follows:

1. Watch the cases of prolapsus and remove them immediately. Do this especially at the time the pullets are housed. When pullets show bruised marks or scabs, make an effort to immediately locate the offenders and take care of them.

2. If the birds are crowded, reduce the number or allow abundant free range.

3. Increasing the consumption of dry whole oats, sharp insoluble (granite) grit, the feeding of an abundance of green feed and the use of deep loose straw have sometimes been found to be preventives.

4. Although removal of the cause of the trouble is preferable, some temporary advantage can sometimes be obtained by cutting back the beaks of known offenders or their removal. The use of mechanical devices often permanently eliminates the trouble.

◀◀ IN EAST BENTON, Ill., the majority of the members of the Baptist Church are farmers and poultrymen. Recently the members of the congregation decided to build a new church, and everybody wanted to help pay for the edifice. The men and boys got together, and held a "chicken-picking" contest, after which the poultry was dressed for market. The chickens were sold to New York commission-houses at a good price, and all the cash above the price the chickens would have brought if sold alive in East Benton, was donated to the new Baptist Church building. This amounted to quite a snug sum. Now that the church has been built, one of the Sunday-school classes is known as the "Chicken Pickers Class." The citizens of East Benton are mighty proud of their enterprising poultrymen!

—Poultry Tribune, Jan., 1940.

Detection of Disease When Dressing Poultry

By C. H. Kitselman

Kansas State College

Condensed from a Radio Talk

WITH the exception of a few poultry packing houses, located mostly in the East, there is no federal poultry post-mortem inspection. Much poultry is slaughtered and is shipped under refrigeration from Kansas to certain eastern markets, but is not inspected for disease until after it has arrived at its destination. It is perhaps needless to say that a dressed bird may grade high on specification, but be badly diseased upon post-mortem inspection or when drawn.

Poultry should be drawn and examined, whether home slaughtered or market slaughtered, and until the public demands ante-mortem and post-mortem inspection of poultry similar in kind and extent to that given beef, pork and mutton, then the farmer and the purchaser should be willing to learn the difference between the carcass of a wholesome bird and that of an unwholesome one.

The importance of post-mortem inspection increases in direct proportion to the age of the poultry. That is to say, the percentage of diseased birds in frying and broiling chickens is almost zero compared to that found in heavy roasters and stewing chickens. It appears evident, therefore, that the young birds are marketed at an age before the disease germs have produced definite organic changes. In old chickens, ducks, geese and turkeys, one should insist on a careful post mortem examination.

Detecting Tuberculosis

Some diseases may give an indication of their presence in the dressed bird even though undrawn. Such a disease is generalized tuberculosis of poultry. In many cases, the carcass will be much lighter in weight than one would expect from the size of the bird. This has caused the condition to be referred to as "going light."

Many tubercular birds may seem normal until their internal organs are inspected. The spleen, liver, and lungs may all be spotted with tubercles ranging in size from that of a mere fleck to a half-inch or

Presented on Station KSAC, Dec. 6, 1939

larger and from a white to a yellowish-white in color. Any of these organs may be involved. If you notice these nodules, you should consider the carcass as unfit for human food. The experienced inspector bases his decision on the number, size, and location of the nodules and, particularly, on whether or not the carcass shows emaciation or extreme leanness.

Some conditions during the life of the bird lead to a wasting away of the muscles and the cause is not always easy to determine. Tuberculosis, parasites and various bacteria may produce this type of carcass, and, of course, poor feed, or too little feed will cause excessive leanness. The judgment as to whether the carcass is edible or inedible will depend on finding the cause and noting the extent of the emaciation.

Indications of Fowl Pox and Roup

Fowl pox and roup may be recognized on ante-mortem inspection by a careful examination of the eyes, nostrils, and mouth. The presence of a watery discharge or a cheesy deposit on post-mortem inspection will point to this type of disease. The cheesy deposit may be on the lining of the mouth or on the windpipe. Birds affected with either of these diseases should be considered unfit for human food.

Egg concrements or tumors are usually of no importance and the meat of such birds is accordingly considered edible unless there are other changes in the carcass. In examining birds removed from cold storage or from refrigeration, sometimes the skin will show a type of degeneration or spoilage denoted by a whitish-green or whitish-yellow color called "cadaver color." After thawing out the carcass, the skin becomes oily, yellow, leather-like and tightly attached. A red discoloration in the rump muscles due to a settling of blood pigment in that region is occasionally observed. The carcass of such a bird is considered spoiled for human food.

Meat Poisoning

Cases of meat poisoning in people have been traced to eating poorly preserved poultry, and it is stated that no decided change in taste, color or odor was noticed. Of course, it might be explained by the possibility that the meat was wholesome until contaminated during the preparation of the meal or while under poor refrigeration before the meat was consumed. That botulism in man can be traced to eating poultry meat harboring the germ is readily admitted; and furthermore, the mortality in botulism of man approaches 25 to 30 per cent and should, therefore, be a matter of some concern to the poultry inspector.

In hens infected with chronic pullorum disease, there are sometimes seen tumor-like nodules in the lungs which might be confused with tuberculosis. Since man is not affected by this germ, the infected lungs of the bird may be removed and the remainder of the carcass passed, provided that there is no emaciation or other abnormal condition present in the carcass.

Rules Which Guide Inspectors

There are a number of rules drawn up for the guidance of poultry inspectors by the Federal Government designed to aid in the decision of such inspectors, particularly in the border-line cases.

These rules should be kept in mind by farmers, housewives or butchers to guide them in intelligently preparing poultry and offering it for human consumption and the observance of these rules will go a long way toward safeguarding human health from the dangers attendant to the consumption of diseased poultry.

1. The entire carcass shall be destroyed if it shows tuberculosis accompanied by emaciation or anemia or if the spots (tubercles) are seen in the kidneys, ovaries, spleen, brain, testicles or spinal cord or its coverings. If these lesions are seen in any of the muscles, bones or joints, the carcass is unfit for food.

2. Any carcass showing evidence of being badly bruised, or which contains a tumor, abscess or sore containing pus is unfit for food.

3. Carcasses in which the lungs show pneumonia, the chest cavity contains pus, the joints are swollen, or the intestinal tract shows free blood or a greenish-red coating on the lining should be rejected for human food.

4. Carcasses showing a yellowish-brown staining of the membranes lining the eyes, chest cavity, and digestive or respiratory system shall be considered unfit for human food.

5. Poultry showing a slimy degeneration of the carcass fat or a watery condition of the muscles shall be rejected for human food.

PURCHASE of eggs in Germany is strictly rationed and producers have to deliver all their eggs to Government collecting stations. One farmer's wife was arrested for selling eggs after a church service and some of her customers were charged with "conniving to injure the war economy of the State."
—Poultry World, London, England, Jan. 5, 1940.

PRESENTS of hard-boiled eggs are given to childless couples in Croatia, after two years of marriage, to "break the spell."
—Carl H. Schroeder, Poultry Tribune, Jan., 1940.

Infertility in Geese

By W. Lloyd Thomas

Condensed from Eggs (England)

POOR fertility is always a serious matter, but probably more so for the goose-keeper than those interested in most other forms of feathered stock.

In their domestic affairs geese are something of a law unto themselves. Habitually fastidious in their selection of a mate, they are, the decision once made, none the less faithful to their choice afterwards.

To those accustomed to the promiscuous ways of other feathered males, such behaviour, until explained, can often be the source of much worry, puzzlement and faulty speculation.

Incorrect Mating

For example, the fertility of a newly acquired pen is found to be abnormally low. It may be a trio producing 50 per cent or more clear eggs, or three geese with but one male between them turning out no more than one fertile in every three eggs laid.

Encountering this phenomenon for the first time, the tendency of the newcomer to geese is to jump to the conclusion that the male bird lacks vigor. But hardly ever is this really so. A gander vigorous enough to mate with one bird is nearly always sufficiently virile to fertilize at least two more. If his vigor is genuinely impaired, as a general rule he does not mate at all, thus leaving no room for doubt as to his condition.

Consequently, the cause of infertility which affects some but not all the eggs should be sought elsewhere.

In nine cases out of ten incorrect mating will be shown responsible. The gander in the absence of proper initial care has accepted one mate and is regularly paying court to her while ignoring the rest. The infertile eggs do not, as was first supposed, originate more or less equally from all the geese, but only from the neglected bird or birds.

To correct this form of trouble, once the breeding season has commenced, sufficiently soon to avoid serious loss is almost impossible. The removal of the favorite in the hope of forcing the gander to turn to his other mate, or mates, more often than not proves the reverse of a cure. The fertile bird upset by the change ceases to lay, thus depriving her owner of the few hatchable eggs the pen produced. The gander, so far from immediately consoling himself elsewhere, wastes days, and even weeks, hunting and

calling for his missing companion.

Make Sure at the Beginning

Only by making sure at the very outset that the breeding pen is correctly and evenly mated can major calamities of this kind be avoided.

To this end it is as well to know something of the slips in management most frequently responsible for incomplete mating. The one probably most to blame is when the novice obtains his females from one source of supply and the male from another.

In these circumstances it is not uncommon for the gander to be turned down with two, or may be three, strange geese in the fond belief that the mating cannot be otherwise than as innocent of partiality as that of a cockerel.

If the male is a young, hitherto unmated bird, such may actually prove the case. On the other hand, it may not. But in any event it is never safe to assume a mating universal until it has been actually proved so beyond all room for doubt.

Intelligent observation can help much in disclosing the true state of affairs. By banding the geese with bands of different color, it is easy to discover whether the gander is spending more time with one consort than another.

At feeding time a specially close watch should be kept; unaccepted females are usually driven off, or, at any rate, bullied, by the rest of the pen when around the trough.

If the pen appears to be in harmony and the gander shows himself equally devoted to all his mates, the probability is that all is well. Even so, it is best to make absolutely certain.

Testing His Affection

His affection may be tested by removing one (or, if the gander has three mates, two) of the females out of sight and sound of the male. If he still adheres to the remaining bird and does not exhibit undue agitation, it is fairly safe to regard his mating with her as complete. Should, however, the gander become violently distressed and show no interest in the remaining bird, it is unlikely she is as yet accepted. In the latter event, he should be left alone with her until the two appear on good terms.

This test, to be complete, naturally, should be applied in turn to each female included in the pen. When it becomes necessary to withhold the presence of a favorite (or favorites) for a time, care must be exercised not to over-prolong the separation, otherwise she (or they) may become forgotten and hence neglected.

Another prolific cause of a poor average of fertility is the introduction of an additional goose into a pen already mated over a season or more.

Simply to turn in the new bird with the others and expect her to be accepted is to court almost inevitable failure. The only satisfactory course is to remove altogether the existing females, leaving the gander alone with the new bird until friendly relationships are fully established. As this may take as long as three weeks, if not more, the necessity for having these matters settled well in advance of the commencement of egg production is self evident.

Saving Turkey Weight

The loss of valuable pounds of turkey weight can be avoided if the grower watches carefully to prevent the causes. The causes usually arise just prior to and during marketing. Saving this weight is as important to the final profit made as getting it on the birds in the first place. Each marketing season brings to light additional ways in which weight shrinkage may be prevented.

Almost every grower knows that he should keep feed from the birds for 12 to 15 hours prior to killing, but it was not known until recently, however, that this period may be considerably shortened by using mash instead of grain for the final feeding. Turkeys may be allowed to eat mash up to 8 or 10 hours before slaughtering, as mash digests much more quickly than does grain. This shorter so-called "starvation" period was found to prevent considerable weight loss when spread over a large number of birds. Because grain is fed to turkeys at this time of the year by most growers, they just allow the birds to eat it until the "starvation" period begins.

Another practice that is used is that of cooping the birds. This necessitates catching them which may cause bruising and skin abrasions. Turkeys will jerk and flop when caught, especially the males. Turkeys with skin defects are graded lower according to the U. S. Standards, and the extra handling also causes weight shrinkage.

Turkeys that require hauling before being killed and dressed should be loaded into double-decked trucks or wagons as are hogs; by using chutes. This saves much time, an important item in saving weight during the marketing of turkeys, for the tender meated birds shrink rapidly. By getting the corral and loading chute in place three or four days before marketing the turkeys become familiar with them and will not stampede or resist when driven into the trucks or wagons.

Because of the big weight loss always experienced between farm and market, turkey growers are beginning to dress their turkeys at home and then ship the dressed and packed carcasses. This practice is said to save a shrinkage of 2½ to 2 per cent, according to figures of the Nebraska Station, as well as of the Northwest Turkey Growers Association.

Poorly finished turkeys show a much greater shrinkage than well finished birds, which makes proper finishing before marketing of major importance in preventing weight losses.

—Emil G. Glaser in Turkey World, Dec., 1939.

Synthetic Egg White Made from Soy Beans

A substitute egg white extracted from the soy bean has been developed by Betty M. Watts and Doris Ulrich of the University of California, according to newspaper reports. The new product, which is a pale yellow powder and foams to 14 times its volume, even when mixed with five parts of water, is claimed to be tasty in cakes, candies, puddings and similar foods. It is said to produce an excellent meringue and is not subject to spoilage.

Two years ago Miss Watts discovered the presence of a substance in soy bean flour which would foam when whipped. However, it had a disagreeable, bitter taste. After Miss Watts and Miss Ulrich removed the protein glycinin, the taste was improved. Glycinin is used to make synthetic plastics.

Limestone Floor for Poultry House

Who ever heard of running a chicken house floor through a manure spreader? It sounds more like a Hallowe'en prank than common sense, but that's the very thing Bill Clausen, farmer living in Chebanse township, Iroquois county, Ill., does each fall. The floor, it happens, is limestone, and Bill changes it each year before he houses his flock for the laying season.

"Ground limestone, spread four or five inches deep, makes an unusually good, clean floor," says Bill, "and when it is dug up and hauled out on the fields each year, it serves the purpose for which it was originally intended — another application of limestone."

—Prairie Farmer, Jan. 13, 1940.

VIEWS OF THE EDITORS

Egg Whites and Egg Yolks

There is a real challenge to the research minds of America in finding out how many and how varied are the uses which may be made of the whites and the yolks of eggs. We do know somewhat of their values as food material for the peoples of the world. As to their non-food uses we have not even touched the possibilities. Five and six centuries ago those who made color paint materials knew that such paints would keep their true colors and lasting powers when eggs were used as an ingredient. What do we know?

We appear to have reached a saturation point in human consumption while just at the threshold of production possibilities. The human stomach can only accommodate a certain amount of food. What that food is depends largely on taste and pocketbook. An increase in the quantity of any one food is generally at the sacrifice of another food. Exceptional life promoting qualities may temporarily stimulate a demand, but in the long run, with the masses of people, the comparable price factor seems to dominate. In the same manner the price factor influences the capacity for production.

What then is the answer? We believe it lies in developing non-food uses for egg whites and egg yolks. The United States government has established regional research laboratories for the special purpose of seeking non-food utilization for food crops. Why has not the egg and poultry industry received first consideration in this research activity? This industry is a possible outlet for such a large total quantity of grains and grasses that it is difficult to visualize the thinking which would leave eggs out of the initial research endeavors at these regional laboratories. It is, in our thinking, a lame excuse to reason that since our agricultural experiment stations have not made any preliminary studies that temporarily eggs and poultry should be left out of the picture. It is our hope that those in charge of the regional laboratories of the U. S. Department of Agriculture will reconsider their decision as to products of the egg and poultry industry.

—The U. S. Egg and Poultry Magazine, Feb. 1940.

They Would Like to Eat More Eggs

To the farm woman who asks: "Why don't people eat more eggs?" one answer is that folks will eat more eggs when they have more money in their pockets.

While the egg market would be greatly improved if quality were higher, if grocers would keep eggs in refrigerators instead of in warm rooms, the great boost for eggs would come with an increase in the average income of consumers.

At the recent Farm Bureau convention, W. D. Termohlen pointed out surveys had shown that families with incomes of less than $750 a year ate only eleven dozen eggs per capita during the year.

Families at the next income level, $750 to $1,250, ate fifteen dozen eggs per person. Families with incomes of from $1,750 to $2,500 ate twenty-one dozen eggs per capita per year. About one-third of the families in the nation are in the $750 a year or less class. Push income up to the next level, and egg consumption would be raised more than 100,000,000 dozen eggs a year.

The blue stamp plan shows that the poorest families will eat eggs by the bushel if they can get them. If the blue stamp plan were extended to all relief families in the nation, egg consumption would probably go up by at least 100,000,000 dozen eggs a year.

The answer to a lot of farm problems is right in the city. Get city incomes and city production up, and the home market would gobble up a lot of what we now think are surpluses.

—Wallace's Farmer, Jan. 13, 1940.

To Make Disinfection Doubly Effective

While we all recognize the great value of disinfectants on the poultry-farm, many people overlook the importance of what may be termed mechanical disinfection, that is to say, the removal of disease-producing organisms by scraping, scrubbing and washing.

These processes should always precede the use of disinfectants. It is most unwise to rely on spraying only.

An excellent example of the value of mechanical disinfection is seen in the methods employed for the eradication of coccidiosis.

If the house is thoroughly cleaned, the floors scraped and brushed, and the litter renewed, the majority of the parasites are removed, and if the work is done with sufficient care a further batch of chicks placed in the same house have a reasonable chance of avoiding infection.

Cleaning is equally effective in removing other disease-producing organisms; at any rate, it plays an extremely important part in the elimination of disease.

—Eggs (London), Jan. 10, 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock Preceding year Nov. 1	Layers per flock Dec. 1	Layers per flock Jan. 1	Eggs per 100 layers Preceding year Nov. 1	Eggs per 100 layers Dec. 1	Eggs per 100 layers Jan. 1	Eggs per flock Preceding year Nov. 1	Eggs per flock Dec. 1	Eggs per flock Jan. 1
North Atl.									
1929-38 (Av.)	87.3	92.9	96.9	19.5	20.6	25.8	16.8	19.1	25.1
1939	88.7	96.3	98.4	26.8	27.5	32.8	23.8	26.6	32.3
1940	88.5	92.9	97.6	27.2	28.2	34.1	24.0	26.2	33.3
North Cent.									
1929-38 (Av.)	96.6	107.1	114.0	16.0	12.7	16.5	15.6	13.9	19.2
1939	93.4	102.4	110.4	20.4	17.8	23.2	19.4	18.9	26.1
1940	98.4	108.8	115.0	19.8	20.3	25.2	19.8	22.7	29.6
South Atl.									
1939-38 (Av.)	52.9	56.2	58.9	19.9	18.2	20.7	10.6	10.2	12.2
1939	53.3	56.0	59.9	23.9	23.3	25.9	12.7	13.1	15.5
1940	54.8	56.9	59.9	24.8	23.8	28.0	13.7	13.7	16.8
South Cent.									
1929-38 (Av.)	57.9	61.2	65.0	19.9	15.8	17.7	11.6	9.8	11.6
1939	57.5	60.6	63.6	22.8	19.2	22.3	13.2	11.9	14.4
1940	59.3	62.4	65.8	21.6	18.5	22.3	13.0	11.8	14.8
Western									
1929-38 (Av.)	66.6	70.8	73.2	22.2	18.8	23.2	14.4	12.8	16.4
1939	67.3	71.1	72.6	25.5	21.1	27.1	16.9	14.4	19.6
1940	67.5	70.4	73.7	26.5	24.2	30.2	17.0	16.1	21.8
United States									
1929-38 (Av.)	73.8	79.8	84.5	18.1	15.2	18.7	13.5	12.3	15.8
1939	72.5	78.0	82.8	22.3	19.9	24.6	16.3	15.9	20.4
1940	75.1	80.8	85.2	22.0	21.5	26.3	16.6	17.3	22.2

New record high levels of egg production per layer and per farm flock for January 1 were established on January 1, 1940. Producers' egg prices on December 15 were the lowest for that date in 30 years and chicken prices were considerably below the 10-year average. The size of the farm flock has not increased as much as was expected earlier in the season because of these unfavorable chicken and egg prices, which have been accompanied by rising feed prices.

The average number of eggs laid on January 1 per 100 layers in farm flocks was 26.3 compared with 24.6 a year ago and the 10-year (1929-38) average of 18.7. The January 1, 1940 layings for the United States exceeded the previous high of last year by about 7 per cent. In the Western States, the rate of layings was about 11 per cent above January 1, 1939, in the East North Central States about 9 per cent, in the West North Central and South Atlantic States about 8 per cent, and in the North Atlantic States 4 per cent above; and in the South Central States, the same as a year ago.

The indicated total egg production on January 1 was the largest of record, being about 9 per cent above a year ago and about 40 per cent above the 10-year (1929-38) average. Compared with a year ago the increase in the West North Central States was about 14 per cent, in the East North Central States about 13 per cent, in the Western States about 11 per cent, in the South Atlantic States about 8 per cent, and in the North Atlantic and South Central States about 3 per cent. Egg production in all geographic areas exceeded the 10-year average from 28 to 58 per cent. Although the number of layers per farm flock on January 1 was less than 1 per cent above the 10-year average, the increased rate of lay was sufficient to bring total egg production about 40 per cent above the 10-year average. Increased egg production during recent years has been due mostly to the increased rate of lay during the fall and winter months.

The average number of hens and pullets of laying age in farm flocks belonging to crop reporters on January 1 was 85.2 compared with 82.8 a year ago and the 10-year (1929-38) average of 84.5. Compared with a year ago the increase in layers was about 5 per cent in the West North Central States, about 4 per cent in the South Central States, about 3 per cent in the East North Central States and about 2 per cent in the Western States. There was no change in the South Atlantic States but a decrease of about 1 per cent in the highly commercial North Atlantic area. Compared with the 10-year average, increases were shown in all geographic areas except the West North Central, which remained about the same.

For the United States the seasonal increase in the number of layers during the four months from September 1 to January 1 was about 37 per cent compared with about 38 per cent during the same period last year, and the 10-year average of about 33 per cent. The seasonal increases were above the 10-year average in all geographic areas, but were not as large as expectations early in the season based on young chickens on hand June 1.

Holdings of young chickens on January 1, including pullets and other chickens, averaged 83.0 per farm flock compared with 80.3 a year earlier, a gain of 3.4 per cent. The gain was most pronounced, about 11 per cent, in the North Central States, and about 5 per cent in the South Central area, with a very slight gain in the North Atlantic States. Decreases are shown in the Western and South Atlantic areas of 5 per cent and 1 per cent respectively.

The total number of pullets on hand January 1 was about 2 per cent greater than a year earlier. Pullets of laying age were about 3 per cent greater than a year ago, while the number of pullets not yet of laying age was the same as last year. Hens 1 year old and over show a gain of about 3 per cent, while other chickens show a gain of about 10 per cent. The proportion of hens and of all pullets in the farm flock on January 1 was 30 per cent and 70 per cent respectively, about the same as a year earlier. All chickens in farm flocks on January 1 showed a gain of about 3 per cent compared with a year ago.

—Comment from Poultry and Egg Production Report.

Egg Prices

1940 Egg Prices at New York City

Kind	Jan. 5	Jan. 12	Jan. 19	Jan. 26	Jan. 26, '39
Mixed Color Firsts	20	20	22	24¾	17
Nearby and Midwestern White Premium Marks	23-24½	23-24½	26½	25½-27	21½-22½
Nearby and Midwestern White Specials	22½	22½	24¼	25	20½
Pacific Coast Specials	24-24½	24-24½	25¼-26½	27-27½	25½-26
Nearby and Western Brown Exchange Specials	22½	22½	23½-23¾	25¼	20½

With reduced supplies, January prices advanced. Most grades of midwestern and nearby eggs at New York recovered the December losses and at the close of the month were about at the December 1 level. Chicago prices advanced more sharply and were 4 to 5 cents above those of December 1. On the Pacific Coast, however, late January prices were 2 cents below those of December 1 on large U. S. Extras, but about the same for U. S. Standards. Somewhat similar relationships apply with respect to prices quoted on best Pacific Coast eggs in the New York market. On a date-to-date comparison, late January prices on midwestern eggs at New York were 7 to 8 cents higher than a year earlier, nearby eggs were about 3 cents higher, with Pacific Coast eggs in that market about the same. San Francisco prices were about the same as Extras and 2 cents higher on Standards. For the entire month, the January 1940 averages on midwestern Firsts at New York and Chicago will be only 2 to 3 cents above the January 1939 average, nearbys at New York about the same, Pacific Coast eggs (Specials) at New York about 1¼ cents lower, and Extras at San Francisco about 3 cents lower.

Federal Surplus Commodities Corporation purchases in January on the New York and Chicago Mercantile Exchanges approximated 21,300 cases. The following are the prices at which the bulk of these eggs were bought: Chicago, Firsts, 19 cents; Extra Firsts, 19¼ cents; New York, Mixed Color Firsts 20 cents; Standards, 21½ cents; Mixed Color Mediums, 16¼ cents; Nearby Mediums, 20½ cents; Nearby Specials, 22½ cents. In addition to the above purchases, approximately 2,000 cases were purchased on the Pacific Coast under the plan of direct offers by sellers. Prices paid for Large U. S. Extras (Retail Grade) were 19-19½ cents at Portland, Oregon; 20½ cents at Petaluma, California, and 21 cents at Los Angeles. Medium Extras were bought at prices 2 to 3 cents lower than the foregoing. Federal Surplus Commodities Corporation purchases to date from the time buying began in December total 38,400 cases.

—Comment from Monthly Egg and Poultry Markets Review.

Farm Prices of Eggs per Dozen

Year	Jan.15	Feb. 15	Mar. 15	Apr. 15	June 15	Aug. 15	Oct.15	Nov. 15	Dec. 15
			(Figures given in cents)						
Average 1929-38	24.2	20.3	17.3	16.8	16.8	19.9	26.2	30.1	28.8
1938	21.6	16.4	16.2	15.9	18.2	21.0	27.1	29.0	27.9
1939	18.8	16.7	16.0	15.5	14.9	17.5	22.9	25.8	20.5
1940	18.3								

Receipts of Eggs and Poultry

Extremely cold weather through the Middle West and East, and purchases of eggs by the Federal Surplus Commodities Corporation, had a strengthening influence upon egg markets during January, the Agricultural Marketing Service reports. The prevailing frigid temperatures undoubtedly had an adverse effect upon egg production, and the difficulty of moving eggs to markets contributed materially to a reduction of current supplies. Federal Surplus Commodities Corporation purchases absorbed in excess of 23,000 cases, all of which were utilized for relief distribution.

Receipts of Eggs (cases) at 4 Markets*

Geographic sections	December 1939	December 1938	December % change	Jan. to Dec., Inc. 1939	Jan. to Dec., Inc. 1938	Jan. to Dec., Inc. % change
New England	50,946	44,160	+ 15.4	393,456	313,984	+ 25.3
Middle Atlantic	148,036	131,079	+ 12.9	1,958,743	1,654,411	+ 18.4
South Atlantic	12,288	14,666	− 16.2	268,166	256,244	+ 4.7
East North Central	167,404	214,877	− 22.1	2,752,987	2,716,621	+ 1.3
West North Central	238,230	216,855	+ 9.9	7,399,990	6,525,287	+ 13.4
South Central	548	416	+ 31.7	56,004	99,409	− 43.7
Mountain	41,051	22,665	+ 81.1	321,687	438,990	− 26.7
Pacific	80,978	38,383	+111.0	567,183	692,266	− 18.1
Miscellaneous	316	275	+ 14.9	5,080	5,123	− 0.8
TOTAL	739,797	683,376	+ 8.3	13,723,296	12,702,335	+ 8.0

Receipts of Dressed Poultry (pounds) at 4 Markets*

Geographic sections	December 1939	December 1938	December % change	Jan. to Dec., Inc. 1939	Jan. to Dec., Inc. 1938	Jan. to Dec., Inc. % change
New England	383,756	619,914	− 38.1	13,237,894	11,744,205	+ 12.7
Middle Atlantic	1,204,631	800,705	+ 50.4	38,391,302	34,893,733	+ 10.0
South Atlantic	2,140,763	751,261	+185.0	18,899,705	7,657,637	+146.8
East North Central	6,158,692	7,224,325	− 14.8	44,200,133	36,883,326	+ 19.8
West North Central	49,475,767	41,900,767	+ 18.1	225,812,621	192,885,479	+ 17.1
South Central	7,301,073	5,692,460	+ 28.3	30,135,123	33,056,019	− 8.8
Mountain	6,601,109	4,479,416	+ 47.4	13,416,427	9,363,789	+ 43.3
Pacific	1,723,123	1,617,431	+ 6.5	9,662,199	11,403,785	− 15.3
Miscellaneous	—	20,000	—	58,117	20,000	+190.6
TOTAL	74,988,914	63,106,279	+ 18.8	393,813,521	337,907,937	+ 16.5

* New York, Chicago, Philadelphia and Boston.

Receipts of eggs at terminal markets were unusually heavy in December, and the situation was somewhat the same the early part of January. Total arrivals at the four markets during December were 740,000 cases, compared with 548,000 cases the preceding month, and up to January 15, receipts for the month were a third heavier than they had been during the corresponding period of last year. But during the following 10 days, such a reduction had occurred that the total for the month was 10 per cent under a year earlier. During the one week ending January 20 current arrivals showed a reduction of 32,000 cases, or 18 per cent, under the previous week.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plant	Cases Received During Week	% Change from Previous Week	% Change from Last Year
January 6	24	33,328	+4.91	+19.48
January 13	24	31,547	−7.52	+7.60
January 20	26	31,026	−6.93	−3.43
January 27	28	31,903	−0.72	−2.36

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs			Pounds of Poultry (000 omitted)			Pounds of Young Stock (000 omitted)			Pounds of Fowl (000 omitted)		
	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.
Jan. 6	33,218	48,841	−31.99	1,852	2,020	− 8.33	637	653	− 2.46	1,171	1,297	− 9.66
Jan. 13	32,702	55,001	−40.54	2,079	2,462	−15.53	533	685	−22.11	1,494	1,700	−12.14
Jan. 20	25,481	65,456	−61.07	2,074	2,436	−14.84	—	—	—	1,573	1,701	− 7.52
Jan. 27	28,801	65,829	−56.25	1,687	2,338	−27.81	—	—	—	1,347	1,804	−25.29

Deliveries at packing plants in the Central West the same week were 22 per cent below those of a week earlier. Receipts at the country plants have shown successive weekly reductions since the third week of December. But while December receipts at country points were much heavier than a year earlier, the January comparison shows just the reverse, the report for the week ending January 20 indicating a 60 per cent reduction. This striking change may be due to transportation difficulties, which seriously interfered with movements of eggs from farms to normal outlets after the severe weather set in.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	Cases of Eggs No. of Plants	1940	1939	% Change from Previous Week	% Change from Last Year
January 6	62	59,589	54,303	−2.01	+9.73
January 13	61	60,474	56,353	+1.96	+7.31
January 20	62	61,664	58,268	+1.50	+5.83
January 27	59	60,497	59,535	+0.08	+1.62

Poultry Meat Prices

Farm Prices of Chickens per Pound

Year	Jan.15	Feb. 15	Mar. 15	Apr. 15	June 15	Aug. 15	Oct.15	Nov. 15	Dec. 15
				(Figures given in cents)					
Average 1929-38	14.8	15.0	15.3	15.9	15.5	14.9	14.6	14.1	13.6
1938	16.7	16.0	15.9	16.2	15.7	14.2	13.6	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.4	13.0	12.7	12.4	11.7
1940	12.0								

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1938	1937
January 4	9.2	6.0	7.0	.222	.280	.263	2.04	1.68	1.85
January 11	9.3	7.3	7.6	.218	.231	.249	2.01	1.68	1.87
January 18	9.2	7.3	7.7	.218	.228	.244	2.01	1.67	1.88
January 25	8.3	8.2	8.7	.239	.203	.219	1.97	1.67	1.90

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded First (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-Yr. Avg. 1930-39	1940	1939	1940	1939
January 6	6.72	5.02	4.79	.190	.215	1.276	1.079
January 13	6.66	6.12	5.17	.190	.176	1.266	1.081
January 20	6.32	6.13	5.46	.201	.175	1.272	1.073
January 27	5.38	6.65	5.55	.234	.158	1.262	1.056

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1939	1938	1937	1936	1935	1934
December	8.12	4.35	6.12	6.82	5.17	6.23
Year	7.17	6.50	8.27	7.07	6.41	7.92

—Data compiled by Edwin C. Voorhies, University of California.

Eggs in Storage

Storage Holdings of Eggs

Kind	Jan. 1 5-Year Avg. 1935-39	Jan. 1 1939	Dec. 1 1939	Jan. 1 1940	% Change Jan. '39-Jan. '40
		(Thousands)			
Shell Eggs (cases)	679	302	1,580	533	+76.4
Frozen Eggs (lbs.)	71,675	62,903	87,802	72,264	+76.4
Frozen Case Equivalent (cases)*	2,048	1,797	2,509	2,065	+14.9
Total (cases)	2,727	2,099	4,089	2,598	+23.7

* Frozen eggs are converted on the basis of 35 lbs. to the case.

Storage stock of eggs have been rapidly diminished the past thirty days. On January 1, total U. S. stocks of 533,000 cases represented an increase of 230,000 cases over the same date last year. The out-of-storage movement of eggs in the 35 cities indicates a January reduction for the entire country about the same as the 1935-39 average, which was 456,000 cases. These 35 cities held 455,000 cases on December 30, which amount was reduced to 178,000 cases by January 20. Stocks in the four principal markets the first of January, amounting to 322,000 cases were down to 76,000 cases by January 25. These changes suggest that a record low for February 1 is in prospect.

—Comment from Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Frozen Poultry

Kind	Jan. 1 5-Year Avg. 1935-39	Jan. 1 1939	Dec. 1 1939	Jan. 1 1940	% Change Jan. '39-Jan. '40
		(Thousand Pounds)			
Broilers	16,201	11,552	10,570	11,166	− 3.3
Fryers	14,984	15,078	11,387	12,783	− 15.2
Roasters	32,662	33,984	25,537	31,083	− 8.5
Fowls	24,442	23,823	23,602	27,717	+ 16.3
Turkeys	23,785	22,763	26,498	52,293	+129.7
Ducks	4,617	6,739	8,064	5,849	− 13.2
Miscellaneous	21,286	25,170	21,991	19,222	− 23.6
Unclassified				7,345	
Total	137,977	139,108	127,649	167,458	+ 20.3

Poultry Canning Operations

Poultry Canning Operations During December, 1939

Commodity	Quantities reported to date for Dec. 1939	Quantities reported for Nov. 1939	Same Firm Comparison Dec. 1939	Dec. 1938	% change in 1939
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	3,456,682	2,582,018	3,456,682	3,525,380	−2
Number of firms reporting	18	20	18		

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of plants	Eggs Set			Salable Chicks Hatched During December			Chicks Booked Jan. 1 for Jan. or Later Delivery			
		1939	1938	% chg.	1939	1938	% chg.	No. of plants	1939	1938	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	14	1,018	1,747	− 42	967	1,024	− 6	12	1,355	2,433	−44
Mid. Atl.	14	294	403	− 27	114	195	− 42	19	364	515	−29
S. Atl.	19	637	596	+ 7	404	331	+ 22	16	811	910	−11
E. N. Cent	40	657	642	+ 2	274	288	− 5	44	1,052	1,024	+ 3
W. N. Cent.	7	51	67	− 24	31	33	− 6	13	119	69	+72
S. Cent.	7	148	213	− 31	43	25	+ 72	9	247	152	+62
Mountain	3	31	14	+121	9	1	+800	5	32	30	+ 7
Pacific	19	761	1,009	− 25	361	352	+ 3	21	3,557	5,125	−31
U. S.	123	3,597	4,691	− 23	2,203	2,249	− 2	139	7,537	10,258	−27

The weakness in both the egg and poultry markets during the closing months of 1939 apparently has reduced the demand for hatchery chicks. Reports from commercial hatcheries to the Agricultural Marketing Service indicate that while hatcheries hatched almost as many chicks in December as they did in the same month in 1938, the future outlook was not particularly promising and they set considerably less eggs. Advance orders on January 1, 1940, showed a definite slackening of buying interest compared with a year earlier.

Advance orders are lagging considerably behind those of a year earlier. On December 1, 1939, hatcheries had booked orders for almost as many chicks as they had on the same date in 1938. One month later, however, hatcheries reported only about three-fourths as many booked for future delivery as they had booked on the same date last year. Reports from 139 plants show that on January 1, 1940, they had received orders for 7,537,000 chicks for January, or later, delivery compared with 10,258,000 chicks in January 1, 1939. This is a decrease of 27 per cent.

Because of the relatively slow demand, and the increasingly unfavorable feed-egg ratio, hatcheries are maintaining a cautious attitude toward anticipating future demands not covered by advance orders.

The New England States showed a moderate decrease in the number of chicks hatched in December compared with the number hatched a year earlier, but the output of the Middle Atlantic States was materially lower. Hatchings in the East North Central States and West North Central States were also materially less, but in the South Atlantic, South Central, and Mountain States, they were somewhat larger. The volume of December hatchings in these last three areas, however, is always small and has only a minor effect in influencing the December trend for the country as a whole. The December output for the Pacific Coast States was about 3 per cent larger than in 1938.

The number of eggs set in December compared with a year earlier were much lower with the exception of the South Atlantic, East North Central and Mountain States. Settings in the New England States showed a decrease of 42 per cent; in the North Atlantic States, 27 per cent; in the West North Central States, 24 per cent; in the South Central States, 31 per cent; and in the Pacific Coast States, 25 per cent.

The demand for chicks hatched in December seemed to have come largely from broiler producers. Approximately 90 per cent belonged to the heavy breeds compared with 87 per cent in December a year earlier. The only region to show hatchings predominately of the light breeds was the Pacific Coast States, with 82 per cent compared with 78 per cent in December 1938.

Of the total number of chicks hatched in December, 93 per cent were sold and delivered as day old chicks, 6 per cent were disposed of by other methods, and only 1 per cent were still on hand unsold and undelivered as of January 1, 1940. On the basis of this data, it would appear that so far hatcheries are holding their output very close to the actual demand.

—Comment from Hatchery Report.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		December 1939	December 1938	Jan. to Dec., Inc. 1939	Jan. to Dec., Inc. 1938
Eggs in shell	(doz.)	307,176	201,314	2,696,826	2,092,419
Eggs and Yolks, frozen, dried, or canned	(lbs.)	Not available	Not available	Not available	Not available
Live Poultry	(lbs.)	5,445	8,334	164,206	78,979
Dressed Poultry	(lbs.)	249,125	142,871	2,583,495	1,759,654

Imports of Eggs and Poultry

Commodity		December 1939	December 1938	Jan. to Dec., Inc. 1939	Jan. to Dec., Inc. 1938
Eggs in shell	(doz.)	29,746	21,824	328,523	231,784
Whole Eggs, dried	(lbs.)	11,500	32,500	61,500	204,815
Whole Eggs, frozen	(lbs.)	0	0	420	938
Yolks, dried	(lbs.)	54,450	23,800	682,805	337,519
Yolks, frozen	(lbs.)	0	10,380	25,330	487,010
Egg Albumen, dried	(lbs.)	46,700	88,000	500,479	718,346
Egg Albumen, frozen	(lbs.)	0	0	0	30
Live Poultry	(lbs.)	138,072	226,981	827,763	1,421,463
Dressed Poultry	(lbs.)	21,898	24,886	195,280	524,850
Poultry, prepared	(lbs.)	51,924	41,039	733,795	501,849

Egg Breaking Operations

Egg Breaking Operations During December, 1939

Commodity		Quantities reported to date for Dec. 1939	Same Firm Comparison		
			Dec. 1939	Dec. 1938	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		197,031	191,466	169,753	+ 13
Mixed eggs (plain)		143,890	143,890	25,680	+ 460
Mixed eggs (emulsions, also with sugar, salt, etc.)		42,045	42,045	38,461	+ 9
Egg whites (all descriptions)		141,034	141,034	63,656	+ 122
Egg yolks packed	Without salt, sugar, etc.	97,124	97,124	45,224	+ 115
	With sugar	49,647	49,647	2,820	+1661
	With salt	0	0	35,160	−
	All yolk emulsions, including glycerine	0	0	0	0
Total—pounds		670,771	665,206	380,754	+ 75
Total—case egg equivalent		19,165	19,006	10,879	
Number of firms reporting		27	26		

RESULTS OF LAYING TESTS

Heavy breeds predominate in the 20 highest pens, all breeds, all tests, to January 1, with Rhode Island Reds accounting for 12 of the leading entries, New Hampshires one, and White Leghorns seven.

Back into the lead this month flew H. J. Hardin's Reds at Georgia, after relinquishing the highest perch a month ago. A second Hardin pen pressed forward into third place, with W. C. Mullins' Reds at Texas sandwiched in between. J. A. Hanson's best pen at Storrs, representing the cream of this year's Leghorn crop thus far, ranks fourth, with another Red pen, that belonging to R. E. & F. H. Kendrick, not far away.

Eben Wood's entry at Storrs gained more momentum during December and tops the New Hampshire group by an even larger margin this month. Kauder's Pedigreed Hampshires remain in second position.

Norman W. Amidon's Barred Rocks at Pennsylvania are being pushed a little harder by R. C. Cobb's Rocks at Storrs, but still command the pinnacle position to date. In the White Rock division, however, Townsley Trapnest Farm's pen forged ahead, overtaking E. A. Hirt's outfit at Storrs, which holds second place.

Highest hen to January 1 is H. J. Hardin's Rhode Island Red at Georgia. She has amassed 98 points from 91 eggs in the 92 days thus far. Highest pen for December also belongs to this breeder. His Georgia entry produced 363 eggs, earning 385.95 points during the month.

Twenty Highest Pens in All Breeds to January 1

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1069	1102.10	Georgia
W. C. Mullins	Rhode Island Red	1032	1077.10	Texas
H. J. Hardin	Rhode Island Red	1023	1054.75	Georgia
J. A. Hanson	White Leghorn	1053	1042.35	Storrs
R. E. & F. H. Kendrick	Rhode Island Red	983	1038.60	Rhode Island
Thomas Mettler	Rhode Island Red	1027	1038.30	Hunterdon, N. J.
J. A. Hanson	White Leghorn	1029	1036.80	Storrs
J. J. Warren	Rhode Island Red	1020	1030.40	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	1053	1028.35	Passaic, N. J.
Alfred MacMillan	White Leghorn	979	1025.95	Texas
W. E. Pyles and Son	White Leghorn	996	1022.70	Georgia
W. E. Pyles and Son	White Leghorn	979	1019.35	Georgia
Eben Wood	New Hampshire	951	1018.80	Storrs
W. A. Seidel	White Leghorn	1029	1013.00	Texas
W. C. Mullins	Rhode Island Red	971	1012.85	Texas
W. C. Mullins	Rhode Island Red	994	1011.85	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	964	1010.65	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	986	1008.55	Storrs
E. B. Parmenter	Rhode Island Red	940	1008.20	Rhode Island
Kauder's Pedigreed Leghorns	White Leghorn	983	1003.00	Georgia

High Pen in Each Standard Test to January 1

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1069	1102.10	Georgia
W. C. Mullins	Rhode Island Red	1032	1077.10	Texas
J. A. Hanson	White Leghorn	1053	1042.35	Storrs
R. E. & F. H. Kendrick	Rhode Island Red	983	1038.60	Rhode Island
Thomas Mettler	Rhode Island Red	1027	1038.30	Hunterdon, N. J.
Alampi Poultry Breed. Farm	Rhode Island Red	1053	1028.35	Passaic, N. J.
J. J. Warren	Rhode Island Red	944	964.95	Florida
E. B. Parmenter	Rhode Island Red	938	954.35	Western New York
Burr's Poultry Farm	White Leghorn	937	947.05	Pennsylvania
E. B. Parmenter	Rhode Island Red	887	939.05	New York State
Nelson's Leghorn Breed. Farm	White Leghorn	950	937.55	Oklahoma
Crooks Farm	Rhode Island Red	924	921.75	Michigan
Foreman Poultry Farm	White Leghorn	884	900.45	Central New York
E. B. Parmenter	Rhode Island Red	851	879.10	Maine
Bagby Poultry Farm	White Leghorn	815	826.80	Missouri
Mishler-Liggett	Rhode Island Red	838	816.80	Arizona

High Hen in Each Standard Test to January 1

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	91	98.00	Texas
E. B. Parmenter	Rhode Island Red	90	97.65	Rhode Island
W. H. Wilson	Rhode Island Red	91	97.45	Georgia
E. B. Parmenter	Rhode Island Red	88	96.50	Storrs
E. B. Parmenter	Rhode Island Red	87	95.60	Passaic, N. J.
Louis H. Ritzhaupt	Rhode Island Red	86	94.25	Oklahoma
E. B. Parmenter	Rhode Island Red	86	93.45	Florida
Thomas Mettler	Rhode Island Red	87	93.05	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	85	91.35	New York State
Piho Brothers	White Leghorn	85	90.50	Pennsylvania
Foreman Poultry Farm	White Leghorn	83	90.00	Maine
E. B. Parmenter	Rhode Island Red	82	89.50	Western New York
J. J. Warren	Rhode Island Red	84	88.05	Michigan
Henrich Poultry Farm	White Leghorn	83	87.15	Missouri
Del Rio Farm	New Hampshire	78	84.30	Arizona
Foreman Poultry Farm	White Leghorn	79	82.50	Central New York

High Pen in Each Breed to January 1—(92 Days)

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1069	1102.10	Georgia
J. A. Hanson	White Leghorn	1053	1042.35	Storrs
Eben Wood	New Hampshire	951	1018.80	Storrs
Norman W. Amidon	Barred Rock	939	926.55	Pennsylvania
Townsley Trapnest Farm	White Rock	933	924.15	Georgia
Harvey E. Taylor	White Wyandotte	856	811.80	Texas
Laclede Hatchery	Black Australorp	821	783.90	Oklahoma
Ben G. Monroe	Ancona	768	741.20	Texas
Lindstrom Poultry Farm	Buff Minorca	693	628.80	Texas
Colonial Poultry Farm	White Minorca	601	619.75	Texas
E. J. Covey	Black Minorca	618	617.70	Texas
Famous Poultry Farms	Leghorn Cross	611	582.15	Georgia
Raymond Murphy	White Giant	538	552.50	Missouri
Iowa Master Breeders	Buff Orpington	424	427.25	Missouri
S. E. Raymond	Lamona	390	391.60	Storrs
Harry Phillips	Columbian Rock	359	372.30	Missouri
Cedarlaid Poultry Farm	Brown Leghorn	443	355.10	Florida
C. A. Richardson	Buff Leghorn	342	312.00	New York State
R. L. Jones	Light Brahma	101	102.60	Hunterdon, N. J.
Daniel S. Riker	Buff Rock	54	42.90	Maine
Walter Dobe	Barnevelder	40	39.50	Western New York

High Hen in Each Breed to January 1—(92 Days)

Owner	Breed	Eggs	Points	Test
W. C. Mullins	Rhode Island Red	91	98.00	Texas
George M. Heberer	White Leghorn	88	95.80	Texas
Pine Mt. Valley Farm	New Hampshire	88	93.25	Georgia
John Spangenberg	White Rock	84	88.95	Maine
T. D. Brown	White Minorca	81	87.30	Texas
Dryden Poultry Breeding Farm	Barred Rock	83	86.90	Storrs
Harvey E. Taylor	White Wyandotte	80	84.90	Texas
E. J. Covey	Black Minorca	71	75.60	Texas
Famous Poultry Farm	Leghorn Cross	78	75.60	Georgia
Laclede Hatchery	Black Australorp	77	75.10	Oklahoma
Raymond S. Thomas	Ancona	74	73.75	Passaic, N. J.
Highland Poultry Farm	White Giant	68	71.95	Rhode Island
Lindstrom Poultry Farm	Buff Minorca	70	69.10	Texas
S. E. Raymond	Lamona	57	61.05	Storrs
Harry Phillips	Columbian Rock	57	59.90	Missouri
Iowa Master Breeders	Buff Orpington	58	59.60	Missouri
Chas. C. Ward	Buff Leghorn	56	51.35	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	58	48.30	Florida
R. L. Jones	Light Brahma	45	46.50	Hunterdon, N. J.
Daniel S. Riker	Buff Rock	33	26.60	Maine

High Pen in Each Standard Test for December

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	363	385.95	Georgia
W. A. Seidel	White Leghorn	360	376.30	Texas
J. A. Hanson	White Leghorn	358	371.05	Storrs
Thomas Mettler	Rhode Island Red	354	370.80	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	340	367.70	New York State
Alampi Poultry Breed. Farm	Rhode Island Red	342	366.60	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	338	358.45	Maine
E. B. Parmenter	Rhode Island Red	328	357.70	Rhode Island
Joachim Breeding Farm	New Hampshire	335	348.90	Pennsylvania
E. B. Parmenter	Rhode Island Red	333	347.60	Western New York
J. J. Warren	Rhode Island Red	331	335.00	Florida
Crooks Farm	Rhode Island Red	324	332.45	Michigan
Nelson's Leghorn Breed. Farm	White Leghorn	316	329.05	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	289	309.70	Missouri
Walter Cochran	New Hampshire	287	292.35	Arizona
Foreman Poultry Farm	White Leghorn	276	291.65	Central New York

High Hen in Each Standard Test for December

Owner	Breed	Eggs	Points	Test
R. E. Jones	Rhode Island Red	31	34.10	Maine
E. B. Parmenter	Rhode Island Red	31	34.10	Passaic, N. J.
Erath Egg Farm	White Leghorn	31	34.10	Texas
W. H. Wilson	Rhode Island Red	31	34.10	Georgia
E. B. Parmenter	Rhode Island Red	31	34.05	Rhode Island
Payne and Otey	Rhode Island Red	31	33.20	Florida
Crooks Farm	Rhode Island Red	31	33.15	New York State
Highland Poultry Farm	Barred Rock	30	33.00	Central New York
Fuzzydele Farms	New Hampshire	30	32.90	Pennsylvania
J. A. Hanson	White Leghorn	31	32.85	Storrs
Thomas Mettler	Rhode Island Red	30	32.85	Hunterdon, N. J.
Famous Poultry Farms	White Leghorn	30	32.50	Missouri
E. B. Parmenter	Rhode Island Red	31	32.30	Western New York
Louis H. Ritzhaupt	Rhode Island Red	29	31.90	Oklahoma
Del Rio Farm	White Leghorn	30	31.40	Arizona
D. T. Cohen	Rhode Island Red	28	30.80	Michigan

20 Highest White Leghorn Pens in Country to January 1

Owner	Eggs	Points	Test
J. A. Hanson	1053	1042.35	Storrs
J. A. Hanson	1029	1036.80	Storrs
Alfred MacMillan	979	1025.95	Texas
W. E. Pyles and Son	996	1022.70	Georgia
W. E. Pyles and Son	979	1019.35	Georgia
W. A. Seidel	1029	1013.00	Texas
Kauder's Pedigreed Leghorns	983	1003.00	Georgia
Kauder's Pedigreed Leghorns	1000	1000.25	Georgia
Sand Springs Home Farm	985	992.35	Texas
George M. Heberer	973	989.55	Texas
C. B. Davidsen	969	978.55	Georgia
Nelson's Leghorn Breeding Farm	985	976.15	Georgia
George M. Heberer	978	973.45	Texas
W. A. Seidel	948	970.25	Texas
Creighton Brothers	974	961.80	Texas
Foreman Poultry Farm	1009	959.90	Texas
A. E. Guinn	1008	959.75	Georgia
Wm. L. Gilbert Home	929	957.05	Storrs
George M. Anthony	986	951.70	Georgia
Erath Egg Farm	959	947.55	Texas

20 Highest Rhode Island Red Pens in Country to January 1

Owner	Eggs	Points	Test
H. J. Hardin	1069	1102.10	Georgia
W. C. Mullins	1032	1077.10	Texas
H. J. Hardin	1023	1054.75	Georgia
R. E. & F. H. Kendrick	983	1038.60	Rhode Island
Thomas Mettler	1027	1038.30	Hunterdon, N. J.
J. J. Warren	1020	1030.40	Storrs
Alampi Poultry Breeding Farm	1053	1028.35	Passaic, N. J.
W. C. Mullins	971	1012.85	Texas
W. C. Mullins	994	1011.85	Texas
Alampi Poultry Breeding Farm	964	1010.65	Passaic, N. J.
E. B. Parmenter	986	1008.55	Storrs
E. B. Parmenter	940	1008.20	Rhode Island
W. H. Wilson	1056	991.60	Georgia
Booth Farms and Hatchery	977	980.70	Georgia
J. J. Warren	968	971.55	Storrs
J. J. Warren	944	964.95	Florida
E. B. Parmenter	932	963.40	Florida
R. W. Anderson	964	956.20	Storrs
E. B. Parmenter	938	954.35	Western New York
George A. Pearce	1003	953.85	Passaic, N. J.

20 Highest New Hampshire Pens in Country to January 1

Owner	Eggs	Points	Test
Eben Wood	951	1018.80	Storrs
Kauder's Pedigreed Hampshires	919	966.20	Georgia
George A. Pearce	970	953.20	Passaic, N. J.
Thomas J. Harrold	973	931.20	Georgia
Pine Top Poultry Farm	961	931.10	Georgia
Pine Mountain Valley Farms	958	922.75	Georgia
Pine Mountain Valley Farms	932	919.65	Georgia
Pine Top Poultry Farm	863	918.30	Storrs
Hubbard Farms	951	909.70	Pennsylvania
Ned C. Willoughby	952	901.40	Georgia
Pine Top Poultry Farm	888	892.35	Michigan
George A. Pearce	875	891.05	Hunterdon, N. J.
Thomas Mettler	889	865.00	Pennsylvania
Fuzzydele Farms	825	861.45	Pennsylvania
Woody's Hatchery and Poultry Farm	886	856.95	Georgia
Eben Wood	818	854.35	Passaic, N. J.
A. J. Williams	815	847.45	Florida
Lamar W. Sexton	824	818.10	Hunterdon, N. J.
Thomas J. Harrold	870	817.50	Georgia
R. H, Barteaux	809	815.60	Pennsylvania

20 Highest Barred Plymouth Rock Pens in Country to January 1

Owner	Eggs	Points	Test
Norman W. Amidon	939	926.55	Pennsylvania
R. C. Cobb	883	869.05	Storrs
E. B. Parmenter	840	857.65	Georgia
J. W. Schaible	883	831.10	Hunterdon, N. J.
Dryden Poultry Breeding Farm	876	805.75	Storrs
Woody's Hatchery and Poultry Farm	869	803.10	Georgia
Fuzzydele Farms	836	797.50	Storrs
R. R. Parks	799	777.30	Maine
R. R. Parks	820	775.90	Pennsylvania
Broad Acres Farm	830	775.60	Storrs
P. N. Hibbard	832	774.20	Storrs
Dryden Poultry Breeding Farm	835	773.10	Pennsylvania
Riley Poultry Farm	769	761.05	Oklahoma
R. R. Parks	774	759.70	Florida
Riley Poultry Farm	797	752.05	Texas
R. C. E. Wallace	736	749.55	Georgia
Stuart W. Smith	769	741.55	Storrs
Riley Poultry Farm	772	740.25	Georgia
Penn's Poultry Farm	748	722.95	Texas
Fellows Brothers	728	717.55	Storrs

20 Highest White Plymouth Rock Pens in Country to January 1

Owner	Eggs	Points	Test
Townsley Trapnest Farm	933	924.15	Georgia
E. A. Hirt	884	885.35	Storrs
John Spangenberg	900	870.95	Storrs
John Spangenberg	875	866.10	Maine
Drumm Egg Farm	858	845.65	Georgia
Kalerok Farm	795	812.30	Maine
Booth Farms and Hatchery	842	803.30	Texas
Homestead Farms	918	800.55	Pennsylvania
Kalerok Farm	781	794.25	Pennsylvania
E. A. Hirt	758	773.20	Rhode Island
Riley Poultry Farm	844	757.35	Georgia
Riley Poultry Farm	777	755.35	Oklahoma
Albert C. Lawton	772	750.20	Storrs
A. H. Ward Poultry Farm and Hatchery	784	744.15	Oklahoma
Booth Farms and Hatchery	747	735.65	Oklahoma
Booth Farms and Hatchery	716	734.90	Missouri
Riley Poultry Farm	789	725.20	Storrs
Missouri Valley Poultry Farm	787	723.85	Texas
Four Winds Farm	765	722.55	Michigan
Belcarihill Farms	778	714.55	Pennsylvania

Average Production in Each Test to January 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. in Ounces	Per Cent Mortality for Dec.	Per Cent Mortality to Jan. 1
Georgia	1,352	61.93	59.74	23.13	2.21	4.14
Texas	1,456	58.55	57.14	23.40	2.47	3.50
Storrs	1,300	55.71	54.52	23.52	2.07	2.84
Pennsylvania	1,079	55.77	53.70	23.08	.74	2.50
Oklahoma	650	53.46	52.17	23.40	2.30	3.38
Passaic, N. J.	1,144	50.56	49.72	23.59	1.22	2.44
Hunterdon, N. J.	650	49.78	48.63	23.44	1.23	2.92
Florida	1,248	48.79	47.20	23.20	1.52	2.80
Michigan	741	47.15	45.77	23.28	1.61	3.23
Arizona	390	44.84	42.57	22.77	1.79	4.10
Maine	1,027	42.52	40.64	22.92	1.94	3.31
Rhode Island	650	38.13	38.42	24.16	1.69	5.53
Missouri	780	37.39	38.27	24.57	1.92	3.07
New York State	1,092	37.38	36.47	23.40	.82	2.38
Central New York	910	35.58	34.23	23.08	1.64	1.86
Western New York	884	35.18	33.85	23.08	.90	2.03
All Tests	15,353	48.31	47.03	23.35	1.65	3.06

High Pen, Each Breed, in Illinois Non-Standard Test to January 1

Owner	Breed	Eggs	Points
Walter Swanson	White Leghorn	455	469.15
Mary Ann Coyne	New Hampshire	394	425.25
Mapleside Poultry Farm	Barred Rock	439	398.55
Berry Ajax Hatchery	Black Australorp	407	395.30
Schafer Hatchery	Rhode Island Red	338	344.80
Belldear Hatchery	White Rock	338	329.40
Schafer Hatchery	White Wyandotte	311	324.40
Wallace Moody	Buff Rock	310	302.30

5 High Pens, R. O. P. Progeny Test, Paterson, N. J., to January 1

Owner	Breed	Eggs	Points
Crooks Farm	Rhode Island Red	1100	1093
E. B. Parmenter	Rhode Island Red	1105	1079
W. B. Coles	White Leghorn	976	922
E. H. Bodine	White Leghorn	933	917
E. R. Rutter	White Rock	876	836

High Pen, Each Breed, in Vineland, N. J., Hen Test to January 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	425	462	Two-Year
E. B. Parmenter	Rhode Island Red	367	399	Two-Year
Hockhockson Farm	Barred Rock	308	327	Two-Year
Albert Lawton	White Rock	206	220	Two-Year
Pine Top Poultry Farm	New Hampshire	182	197	Two-Year
Sebold Poultry Farm	White Leghorn	207	220	Three-Year
G. E. Coleman	Rhode Island Red	143	152	Three-Year
Nedlar Farm	New Hampshire	135	146	Three-Year
Kerr Chickeries	Rhode Island Red	317	344	Mixed-Age
Quimby School	White Rock	224	240	Mixed-Age
Shamrock Poultry Farm	White Leghorn	222	239	Mixed-Age
Schwegler's Hatchery	White Wyandotte	208	223	Mixed-Age
Eben Wood	Barred Rock	197	214	Mixed-Age
Wene Chick Farm	New Hampshire	150	163	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	4271	4609	Two-Year
J. J. Warren	Rhode Island Red	4084	4378	Two-Year
Schwegler's Hatchery	Barred Rock	3439	3577	Two-Year
Albert Lawton	White Rock	3199	3380	Two-Year
Pine Top Poultry Farm	New Hampshire	2899	3126	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6175	6616	Three-Year
J. J. Warren	Rhode Island Red	6034	6497	Three-Year
Nedlar Farm	New Hampshire	4790	5154	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to January 1

Owner	Breed	Eggs	Points	Class
E. B. Parmenter	Barred Rock	371	406.20	Two-Year
J. J. Warren	Rhode Island Red	340	369.85	Two-Year
J. A. Hanson	White Leghorn	330	361.90	Two-Year
Fuzzydele Farms	New Hampshire	305	335.10	Two-Year
Lindstrom Poultry Farm	White Wyandotte	192	209.20	Two-Year
Fuzzydele Farms	White Leghorn	369	405.35	Mixed-Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Lindstrom Poultry Farm	White Leghorn	3884	4144.05	Two-Year
E. B. Parmenter	Rhode Island Red	3869	4118.35	Two-Year
E. B. Parmenter	Barred Rock	3682	3929.35	Two-Year
Fuzzydele Farms	New Hampshire	3560	3813.35	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3282	3490.85	Two-Year
A. M. Wolgemuth	White Leghorn	4583	4848.65	Mixed-Age

Radio Soothes Layers

Use of the radio is reported by the Wirtz Brothers, poultrymen of Lebanon, N. J., to keep the layers calm and serene. On this poultry farm a two-story, eight-pen house is wired with four speakers placed in the partitions dividing the rooms, with the radio itself in the feed room at the end of the building. The radio is turned on in the morning and programs continue during the day. The purpose is to drown out unusual outside noises which frequently cause a flutter throughout the laying pens.

On windy nights the radio is left on all night. During the gunning season occasional sounds of guns around the buildings have excited the birds, but this condition has been entirely overcome this season.

When asked about the type program preferred by the birds, the owners report that "classical music is first choice with political speeches at the tail end of the list."

—D. M. Babbitt, N. J. Farm & Garden, Jan. 1940.

Lively Demand for Goose Feathers

Here's a curious thing. Live geese have been bringing almost as much as turkeys this year. It's not because dressed geese are worth any more than usual. It's because the feathers are worth almost twice as much as they have been other years!

Manufacturers of furniture and bedding are no longer able to get geese feathers from Poland and Czechoslovakia. So the demand for the feathers available in this country has practically doubled, and so has the price.

In one community where they raise a lot of geese, they have accumulated a huge bin full of feathers which will probably be worth about $15,000 and they're all feeling good about the price they got for their geese.

—Frank Priebe's Weekly Letter to Poultry Raisers, Dec. 16, 1939.

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**Published by Everybodys Poultry Magazine
Publishing Co., Inc., Hanover, Pa.**

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Lindstrom Poultry Farm	White Leghorn	3884	4144.05	Two-Year
E. B. Parmenter	Rhode Island Red	3869	4118.35	Two-Year
E. B. Parmenter	Barred Rock	3682	3929.35	Two-Year
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INTENTIONAL SECOND EXPOSURE

World's Poultry Science Association

Was the World's Poultry Congress worthwhile to you individually? Are you willing to support the organization which made the Congress possible?

It is true that each individual Congress has been managed by an independent Congress organization, but the organization which makes these international meetings possible is the World's Poultry Science Association.

The proposal to form an international organization materialized in a conference held in London, July, 1912. Twenty-six countries were represented at that meeting, at which time the International Association of Poultry Instructors and Investigators was formed. This name has been since changed to the World's Poultry Science Association. Sir Edward Brown, of England, was named as its first president and Dr. Raymond Pearl, of the United States, as secretary-treasurer.

The activities of the newly formed association were interrupted by the first World War, but an International Poultry Conference took place in London in March, 1919.

The promotion of the World's Poultry Congresses has been one of its chief activities. Seven successful Congresses have already been added to its history as follows:—

First World's Poultry Congress—1921—The Hague, Holland
Second World's Poultry Congress—1924—Barcelona, Spain
Third World's Poultry Congress—1927—Ottawa, Canada
Fourth World's Poultry Congress—1930—London, England
Fifth World's Poultry Congress—1933—Rome, Italy
Sixth World's Poultry Congress—1936—Leipzig, Germany
Seventh World's Poultry Congress—1939—Cleveland, Ohio, U.S.A.

[Please turn to inside back cover]

NATIONAL

POULTRY DIGEST

Published monthly at Hanover, Pa., by Everybodys Poultry Magazine Pub. Co., Inc. C. N. Myers, pres.; Jas. T. Huston, vice-pres.; R. B. Alleman, sec.-treas.; Roland C. Hartman, editor; Thomas E. Moncrief, associate editor. Single copies, 25 cents. Back copies, 40 cents. Subscriptions: $2.00 a year in the United States and the Pan-American postal union; $3.00 a year in Canada and foreign countries. Binder holding 12 copies, $1.00 postpaid in U. S. A. Entered as second-class matter Jan. 20, 1939, at the post office at Hanover, Pa., under the act of March 3, 1879.

Vol. 2, No. 15 March, 1940

In Again — Out Again — Poultrymen!

By W. E. Newlon
University of California

Condensed from Pacific Rural Press

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The Federal-State Market News Service figures show that in December, 1939, Large Extra eggs (San Francisco) averaged 13 cents a dozen less, and Medium Extras nearly 16 cents a dozen less than they were a year ago.

This sad picture is further complicated because feed prices, particularly on animal protein concentrates, milk and fish oils, have increased greatly. University of California records show that it required nearly twice the number of eggs to purchase 100 pounds of poultry feed this past December as compared with a year ago — 8.12 dozens in December, 1939, and 4.35 for the same month in 1938.

Every poultryman knows that certain years are much more profitable than others and that conditions fluctuate abruptly from year to year. We have on record, for every month since January, 1910, the number of dozens of eggs required to purchase 100 pounds of poultry feed. These records show an average of 9.01 dozens in 1927, but only 6.28 dozens in 1910 and 6.5 dozens in 1937.

Pacific Rural Press Company, Chamber of Commerce Bldg., San Francisco, Calif.
(Pacific Rural Press, Feb. 10, 1940)

World's Poultry Science Association

Was the World's Poultry Congress worthwhile to you individually? Are you willing to support the organization which made the Congress possible?

It is true that each individual Congress has been managed by an independent Congress organization, but the organization which makes these international meetings possible is the World's Poultry Science Association.

The proposal to form an international organization materialized in a conference held in London, July, 1912. Twenty-six countries were represented at that meeting, at which time the International Association of Poultry Instructors and Investigators was formed. This name has been since changed to the World's Poultry Science Association. Sir Edward Brown, of England, was named as its first president and Dr. Raymond Pearl, of the United States, as secretary-treasurer.

The activities of the newly formed association were interrupted by the first World War, but an International Poultry Conference took place in London in March, 1919.

The promotion of the World's Poultry Congresses has been one of its chief activities. Seven successful Congresses have already been added to its history as follows:—

First World's Poultry Congress—1921—The Hague, Holland
Second World's Poultry Congress—1924—Barcelona, Spain
Third World's Poultry Congress—1927—Ottawa, Canada
Fourth World's Poultry Congress—1930—London, England
Fifth World's Poultry Congress—1933—Rome, Italy
Sixth World's Poultry Congress—1936—Leipzig, Germany
Seventh World's Poultry Congress—1939—Cleveland, Ohio, U.S.A.

[Please turn to inside back cover]

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INTENTIONAL SECOND EXPOSURE

These ups and downs are even more pronounced from month to month. Our records indicate an even 12 dozens in March, 1938, while in December, 1921, it required only 4.08 dozens for each 100 pounds of feed—a range of nearly 300 per cent.

Reason for Ups and Downs

The figures show that we have had these ups and downs at rather regular intervals for the past 30 years. Why? Because a good year like 1938 brings a big hatch of chicks and a lot of new people into the business, all of which happened in 1939. A poor year like the last half of 1939 and the first half of 1940 always brings a contraction and a short hatch of chicks—just what we will have this spring. The result—"In again, out again, poultrymen."

For tho first 10-year period, 1910-1919, of the 30-year period, 1910-1939 inclusive, it took an average of 7.20 dozens of eggs to purchase 100 pounds of feed. During the second 10-year period, 1920 to 1929 inclusive, 7.81 dozens, and in the third period, 1930-1939 inclusive, 7.46 dozens. In other words, for the past 30 years an average of 7.5 dozens of eggs have been required to purchase 100 pounds of poultry feed.

When we have years requiring much less than 7.5 dozens, expansion follows. When we have years that take much more than 7.5 dozens to purchase 100 pounds of feed, poultrymen "go broke." All of which means ups and downs in the poultry business and these cycles apparently cannot be controlled.

What the Poultryman Can Do

The individual poultryman can use 7.5 dozens as his yardstick. If he cannot stay in the business over a period of years at that level, he should quit, because, apparently, many poultrymen can succeed at this level.

In our opinion, it is unwise to try to expand and contract poultry activities on anticipated conditions. We believe a poultryman should get in the business to the maximum of his capacity to use his own and his family's labor on an efficient, year-round basis. Obtain the best stock available and fill houses with a high percentage of pullets every year. Supply the flock with the best feed to be had at the lowest possible cost per dozen eggs produced.

THERE are 120 counties in Kentucky. A newspaper dispatch recently stated that there are no chickens in eight counties, no horses in two counties, and no horse-drawn vehicles in 32 counties, if returns for tax purposes can be relied upon. However, there is room for reasonable doubt in some cases, as taxpayers make their own returns. —The North American Veterinarian, Feb. 1940.

Why Egg Auctions Succeed

By John J. Scanlan and Roy W. Lennartson
Farm Credit Administration

Condensed from News for Farmer Cooperatives

THE first country-point association marketing eggs by the auction method was organized in New Jersey in 1930. At present there are in operation 29 of these country-point auctions of which all except two are producer-owned and operated. They now operate in 11 states, from Derry, N. H., and Brockton, Mass., in the East to Yorkville, Ill., in the Middle West. Of the 27 cooperative auctions, 16 sell both eggs and poultry, 9 sell only eggs, and 2 sell only poultry at auction. Seven associations which tried to sell by the auction method either ceased to operate in this way or now limit the auction selling to poultry and sell eggs on some other basis.

In 1939, 1,200,000 cases of eggs and 250,000 crates of poultry were sold at auction. The sales value of these products was approximately 11 million dollars.

No Marketing Contracts

According to the latest figures available, more than 17,000 poultry producers sold through the 27 cooperative auctions in 1939. None of these producers is bound by a marketing agreement to sell any or all of his eggs or poultry through the auction. According to interviews with more than 600 auction members in 1936, slightly more than 50 per cent sold all their eggs through the auctions. Only one-fifth reported selling less than half of their eggs through the auctions—many of these sold to hatcheries and during the summer to the shore trade along the Atlantic coast. In some instances, auctions were practically the only outlet used by the members; in others they were more of a temporary, secondary, and surplus outlet.

Prior to the egg and poultry auctions, the cooperative marketing of poultry products had proved successful in only a few communities in the northeastern states. Apparently the kinds of associations well suited to western production and marketing conditions were rather poorly suited to eastern conditions. Only 4 of 22 cooperative non-auction egg-marketing associations now operating in the Northeast were operating prior to the organization of the first country-point auction in 1930.

Other Associations Formed

It is the general impression that the auction type of association has been the chief or only type of association organized recently in the

Farm Credit Administration, Washington, D. C.
(News for Farmer Cooperatives, Feb. 1940)

Northeast to market poultry products; this impression is erroneous. Since 1930, the first year of operation of an egg auction, at least 27 non-auction associations have been formed in the 13 northeastern states, as compared with 25 associations of the auction type. These non-auction associations in 1938 had a combined total active membership and volume equal, respectively, to less than 50 per cent of the active membership and egg volume of the auction associations. In 1937 the average volume of eggs handled by the auctions was 2.4 times the average non-auction egg volume and the volume of poultry 8 times the non-auction association volume.

Reasons for Auctions' Success

A number of probable causes for the success of the egg and poultry auctions are: (1) Location in a commercial but deficit production area, (2) nearness to large consuming centers, (3) patronage of a large number of buyers, (4) simplicity and low cost of operation, (5) good management, (6) informed and loyal members and directorates, (7) freedom of membership, (8) payment according to quality and weight of individual case or crate, (9) care in organizing, (10) egg legislation, (11) outside assistance, and (12) lack of cooperative associations in most of the area.

During the past decade, the northeastern states as an extensive area have made tremendous strides in egg and poultry production. Some of the northeastern states exceed even some of the Pacific Coast states in the numbers and percentages of specialized and commercial flocks. With these types of flocks go high-quality eggs and poultry. Specialized and commercial flocks producing good quality products are essential for the formation of successful cooperative associations in egg and poultry marketing.

Located Near Large Cities

Most of the 22 auctions in operation in 1937 were located in small towns close to large cities. Half of them were within 25 miles of a metropolitan population of half a million people. The average distance to a metropolitan population of 1 million people was only 43 miles; to a population of 5 million it was only 88 miles. Twelve of the 22 auctions were within 100 miles of a metropolitan population of 10 million people and 8 within 100 miles of a metropolitan population of 15 million. The auctions which were the closest to the larger metropolitan populations tended to be the most successful.

Many Buyers Needed

For the essential open competitive bidding the auction type of association requires a relatively large number of buyers especially of the huckster, peddler, and retail-store type. Nearness to large cities usually

insures a sufficient number of buyers but not always. At six of the auctions the average number of buyers purchasing eggs per sale during the first year of auction operation was 41; in 1937, it was 64. Whether cause or effect, the larger auctions almost invariably had the larger number of buyers.

The chief buyer-types of auction eggs are now in order of decreasing importance: Routemen, jobber-wholesalers, chain stores, and producers; of auction poultry they are: Retailers, jobber-wholesalers, routemen, and producers.

Selling by Auction is Simple

Auction selling is relatively simple and therefore appeals to producers. Operations are familiar, prompt, direct, and on an easily understandable basis. Services performed for the members are fewer than those performed by most other types of marketing associations. The auctions require the producers themselves to perform as many marketing functions as possible. This enables the association to perform a minimum of marketing services, to operate at relatively low cost, and consequently (on the basis of the selling prices) to make relatively high net returns. In 1937, for 18 auctions the average operating cost was 37.6 cents per case of eggs, which was 4.4 per cent of the sales value. For associations of other types which operated in the area, the average costs were from 44.8 to 90.2 cents per case, which was from 5.4 to 9.8 per cent of the sales value.

Good Managers

With few exceptions, the auctions have had managers who were honest, capable, and energetic. For the most part, they have been young, aggressive, and enthusiastic individuals who fully realized their responsibilities and the opportunities before them. In a number of instances, they were men just out of state colleges who were determined to make good at their first job—and did.

The boards of directors have been comprised largely of men who were outstanding as producers or who had had some former business experience. Many directors had been engaged in other pursuits before becoming poultry producers and directors. As a result, they tried to have the auctions operate on sound business basis. They were able to give the managers much helpful support and realized the importance of their positions and their responsibility.

Because 22 individual auctions were started with an average of only 44 producers as small, local associations, the original membership was usually comprised of selected, informed, commercial poultrymen who were enthusiastic regarding the purposes and possibilities of the new type of marketing agency.

Quality and Weight

Since each case of eggs or crate of poultry is sold under the number of the individual producer, the auctions maintain the identity of the producer with his product through the selling operation. This enables the producer to receive payment through the auction in accordance with the price received by his individual offering. With few exceptions, state or federal grading standards have been used as the basis of grade designation.

In addition to producer identity and recognized standards, the products are offered by the auction on the basis of weight, color, size, and grade, so that the member may learn to meet the market demand for any particularly desirable quality of produce.

Egg Legislation

Legislation purporting to improve wholesale and retail selling practices relative to the quality and labeling of eggs has been enacted in all except 2 of the 11 states in which the auctions operate. These laws, popularly called fresh-egg laws, have been made highly effective in some of the states through vigorous enforcement. The requirements of these laws are more easily met by nearby producers than by the producers in more distant and less specialized areas of production. As a consequence, the auctions have been patronized by buyers partly because they were among the most dependable and reliable sources of eggs which meet the requirements set forth in the fresh-egg statutes.

Auction groups have not hesitated to invite outside advice and assistance. County agents, officials of state colleges, bureaus of markets, departments of agriculture, and of the federal government have taken a most active interest and have played an important part not only in the formation and early operations of many of the auctions, but they have been consulted from time to time later on as new problems arose.

When the first auctions were organized there were relatively few cooperative egg and poultry marketing associations in the northeastern states. In 1930 there were only 11 of these associations in the 13 northeastern states. Furthermore, most of these were small. This is indicated by the fact that only 2.1 per cent of the membership of all egg and poultry cooperatives in the United States was in these 11 northeastern associations. Likewise, only 6.5 per cent of the country's cooperatively handled poultry products was marketed by the associations in these 13 states. In 1939, there were 43 egg and poultry cooperatives which had 18.2 per cent of the membership and did 18.3 per cent of the business of all cooperatives in this marketing field.

Over Three-Quarter Billion Chicks Produced by Commercial Hatcheries

News Release from U.S.D.A.

A SURVEY of the baby chick hatchery industry conducted by the AAA Poultry Section, cooperating with the Agricultural Marketing Service, shows that an estimated total of 782,000,000 baby chicks were produced by 10,533 commercial hatcheries in the period beginning August 1, 1937 and ending July 31, 1938. The total number of chicks was estimated from replies received from 5,774 hatcheries representing 55.5 per cent of the total incubator capacity.

The 10,533 hatcheries operated during that period were found to have had a total incubator capacity of more than 397,000,000 eggs at one time. They ranged in size from a few hundred eggs to well over a million eggs each. The average capacity was approximately 38,000 eggs, and the average production was about 74,000 baby chicks per hatchery. In addition, 1,105 hatcheries were not operated, and 164 hatcheries produced turkey poults or ducklings exclusively.

Table 1 shows the number of hatcheries in each of the nine size groups, together with their total capacity and the estimated number of eggs set and baby chicks produced. The size group of hatcheries ranging from 10,000 to 24,900-egg capacity contained more hatcheries than did any other group. The greatest number of chicks, however,

Table 1—Estimated Number of Baby Chicks Produced by All Hatcheries, August 1, 1937—July 31, 1938, (by size of hatcheries)

Capacity Group	Number and Capacity of Hatcheries		Estimated Totals	
	Number	Capacity	Eggs Set	Chicks Hatched
1,000 eggs		1,000 eggs	1,000	1,000
Under 4.9	1,450	3,756	9,946	6,855
5.0—9.9	1,417	9,917	24,706	17,000
10.0—24.9	3,025	48,168	124,238	85,520
25.0—39.9	1,720	54,108	139,735	95,160
40.0—59.9	1,262	61,124	158,393	107,388
60.0—99.9	896	66,826	183,106	124,322
100.0—199.9	541	69,816	198,577	134,208
200.0—499.9	182	52,905	187,742	128,311
500.0 and over	40	30,793	120,164	82,981
Total	10,533	397,413	1,146,607	781,745

was produced by hatcheries having a capacity ranging between 100,000 and 199,900 eggs.

Table 2 shows, by States, the number and capacity of hatcheries with the estimated number of eggs set and baby chicks produced. Although Ohio has the greatest number of hatcheries, Iowa has the largest incubator capacity. The five leading States in chick production are Iowa, Indiana, Missouri, Ohio, and Illinois.

Table 2—Geographical Distribution, Capacity, and Estimated Production of Baby Chick Hatcheries, August 1, 1937—July 31, 1938

States	Number of Hatcheries	Total Incubator Capacity	Estimated number of Eggs Set	Estimated Number of Chicks Hatched
		(1,000)	(1,000)	(1,000)
Maine	204	1,739	5,924	4,223
New Hampshire	202	2,964	12,818	9,318
Vermont	54	537	1,819	1,324
Massachusetts	360	5,592	20,455	14,769
Rhode Island	54	581	1,993	1,368
Connecticut	143	4,386	26,660	18,300
New York	521	9,729	24,290	16,050
New Jersey	213	7,775	26,668	18,306
Pennsylvania	592	18,909	55,068	36,245
Ohio	687	30,831	89,133	59,805
Indiana	540	28,652	98,120	66,662
Illinois	542	29,811	80,762	55,510
Michigan	368	12,853	34,120	22,061
Wisconsin	376	12,756	28,236	18,748
Minnesota	472	24,798	53,422	34,375
Iowa	681	35,690	96,818	67,052
Missouri	417	24,713	87,070	61,189
North Dakota	55	1,775	3,742	2,470
South Dakota	116	4,995	13,274	8,924
Nebraska	259	14,230	36,192	24,471
Kansas	414	17,034	43,634	30,588
Delaware	49	2,320	8,360	5,843
Maryland	137	5,038	22,162	15,202
Dist. of Col.	2	37	82	58
Virginia	172	6,504	22,119	15,355
West Virginia	62	1,335	4,154	2,922
No. Carolina	130	3,595	12,706	9,084
So. Carolina	66	1,715	5,364	3,844
Georgia	104	2,572	8,842	6,161
Florida	88	1,698	7,597	5,322
Kentucky	99	3,576	9,948	6,948
Tennessee	109	3,836	12,400	8,698
Alabama	99	1,774	6,249	4,362
Mississippi	55	1,386	5,107	3,490
Arkansas	89	2,321	6,969	4,935
Louisiana	37	824	3,048	2,083
Oklahoma	215	7,962	20,852	14,567
Texas	634	17,914	49,978	34,992
Montana	21	402	1,027	686
Idaho	50	1,428	3,464	2,328
Wyoming	11	236	547	344
Colorado	89	3,575	9,733	6,634
New Mexico	13	548	1,432	985
Arizona	25	716	1,932	1,317
Utah	27	1,798	2,970	1,851
Nevada	4	80	163	117
Washington	193	6,158	13,406	9,079
Oregon	187	5,388	9,159	6,316
California	496	22,327	56,619	36,464
U. S. Total	10,533	397,413	1,146,607	781,745

Follow Hen's Example to Get Better Hatch

Experimental incubators with the same "wave length" as a mother hen have been developed by scientists of the Federal Bureau of Animal Industry. These large machines are equipped with a wave-like motor-driven mechanism that tilts the eggs every 15 minutes, approximately the same as they would be turned if incubated by a hen. The result—a better hatch.

Studies into the death of chicks before they hatch show that a large proportion of the dead embryos were in an abnormal position within the shell. These studies led to the development of the timing mechanism which turns the eggs in the trays mechanically as frequently as the setting hen moves them about in the nest and in much the same manner.

Incubation in this tray reduces the chance of certain types of abnormal positions, say the federal scientists, and has increased the hatch of fertile eggs by approximately 7 per cent.

—The U. S. Egg and Poultry Magazine, March, 1940.

Dirty Eggs Gathered Separately

A California poultryman has hit upon what he thinks is a very good idea to counteract these dirty eggs. He has made a small box approximately 12 inches square and 8 inches deep which he fills with about 4 inches of rice hulls. This box is nailed up on the side wall in some place where it is handy. Every time he goes through his house, he will gather all eggs that are on the floor and put them in this box. Also those in the nests, if there are any that are dirty.

If a poultryman, every time he goes in the house to feed, picks up the eggs that are exceptionally dirty and puts them in this box, he will find that his eggs are a lot easier to clean.

—Ralph Sherman, San Joaquin Valley Poultryman, Feb. 20, 1940.

Home of 11,000,000 Broilers

By O. K. Moore

Condensed from Poultry Tribune

TWO-THIRDS of all broilers raised commercially in the U. S. annually come from Del-Mar-Va Peninsula, that strip of land lying between Chesapeake Bay and the Atlantic Ocean, and comprising parts of Delaware, Maryland and Virginia. Some 11,000,000 birds are raised yearly in the seven broiler counties on the peninsula. Yet, in the early twenties a broiler was virtually a stranger here.

Mild Winter Climate

You're doubtless wondering why the Del-Mar-Va Peninsula and broilers are practically synonymous. More than anything else, the answer to this involves geography. The strategic location of the peninsula results in a mild winter climate, eliminating much of the hazard of winter brooding. The region, in addition, is removed by just a single day's haul from the tremendous consuming population of the East—Baltimore, Philadelphia, New York and Boston.

Back in the twenties, a few optimists ventured into winter broiler production. Broiler profits then were attractive. Truck cropping, a major peninsula enterprise, wasn't so profitable. Consequently, trucking gave way to broilering. Then, the fowl paralysis menace shifted egg farmers to broiler farming. So today, we have Del-Mar-Va's broilerdom with individual producers handling as many as 100,000 birds annually. The rocket-like increase in peninsula broiler production can be attributed in large measure to the ease with which broilering can be combined with other enterprises. Broilers and truck farming make admirable companion enterprises, for one is produced in winter, while the latter requires a farmer's spring and summer labor.

One Type of House

Essentially one broiler house is found on the peninsula. It's of the continuous type, many a good block long, with either a shed or gable roof, the former predominating. There are many modifications of this general type. Some have dirt, others wood or concrete floors; some are narrow, others deep with 20 feet the rule; about two-thirds of the houses have open fronts; home houses are painted, neat appearing. Some birds, actually about one-fourth of the total, are kept confined within the houses for the duration of their brief careers; others are let out after about the fourth week. In Del-Mar-Va, battery brooders and colony broiler houses just are not. Coal burning stoves are the favorites, with practically no oil or electric brooding practiced.

Poultry-Dairy Publishing Company, Mount Morris, Ill.
(Poultry Tribune, March, 1940)

Best Profits When Not Crowded

Generally, 475 broilers are started per stove, and the greatest profits are made when no more than 150 to 174 birds are allowed in each 100 sq. ft. of floor space. At about the sixth week, the birds are thinned down, increasing the floor space per bird to compensate for their rapid increase in size. Usually producers cease firing their stoves sometimes between the fourth and eighth week of brooding.

Some chicks are started on the Del-Mar-Va Peninsula as early as August, but more are started in January than at any other time, with February second, October third and September fourth.

Commercial hatcheries supply about 96 per cent of the chicks used at Del-Mar-Va.

Having made a study of broiler production in that part of Del-Mar-Va situated in Maryland, in which records embracing 1,962,000 broilers for the period July 1, 1934 to June 30, 1936 were included, P. R. Poffenberger and S. H. DeVault, University of Maryland, have unearthed the following facts:

(a) About 39 per cent of Maryland broiler producers raised less than 5,000 birds annually, while about 35 per cent produced between 5,000 and 10,000, leaving 26 per cent growing more than 10,000 yearly.

(b) Broilers were sold at an average age of 13.5 weeks and at an average weight of 2.7 lbs. per bird.

Volume Offsets Low Unit Profit

(c) The investment per broiler was 16.4 cents per bird—14.7 cents per bird on the most profitable farms and 21.4 cents on the least profitable. The average income was 54.5 cents per bird. Cost, including unpaid family labor, averaged 49 cents per bird. This resulted in a net profit of 5.6 cents per bird. These are average figures, meaning that many producers went in the hole while others went considerably above the average. These figures, too, are highly variable from year to year. All in all, broilermen apparently strive to offset low per-unit profit by mass production. Costs, according to Poffenberger and DeVault, were found to be distributed as follows:

Item	Cost per bird (Cents)	Per cent of Total
Feed	25.1	51.4
Chicks	11.6	23.9
Labor	4.0	8.2
General	2.9	6.0
Overhead	2.5	5.3
Marketing	2.5	5.2

Feed cost per bird was highest on farms having the smallest number of birds, point out Poffenberger and

DeVault. High labor cost likewise was associated with the smaller farms, this on a per-bird basis.

(d) It is unprofitable to market broilers weighing less than 2.5 lbs. The most profitable weight was found to be 3 lbs. or more.

(e) The predominating pure breed is the Barred Rock. However, crossbreds—with New Hampshire females mated to Barred Rock males being most common – are even more popular.

(f) Fifty-seven per cent of all broilermen fed commercial broiler starting mash and changed to broiler mash at the third or sixth week; 43 per cent fed the same feed from start to finish. No fattening is resorted to with the exception of that done by the 21 per cent who feed wet mash the last ten days before the birds are sold. More than half the producers feed dried skimmilk and semi-solid buttermilk, Poffenberger and DeVault found. Cod liver oil feeding is considered essention for winter-time broiler production.

(g) The most profitable method of marketing broilers was selling to local buyers and truckers; selling to commission merchants in cities was much less profitable. Practically all birds are sold alive.

Kenneth W. Baker, University of Delaware, in analyzing records kept by Delaware broilermen and involving 590,000 birds during recent months has derived the following pertinent information:

(a) In comparing flocks showing high labor returns with those showing low labor returns, the high return flocks had:

1. An average of 135 more chicks purchased per flock.

2. Six and nine-tenths per cent fewer chicks to die.

3. A marketable weight 8 weeks earlier, yet birds weighed .33 lbs. more each.

4. An average net profit of $720 more per flock.

5. An average feed consumption of 1.2 lbs. less per broiler.

6. Feed cost at 21 cents per cwt. less.

7. An average selling price one cent per pound greater.

High Priced Feed May Be Cheapest

(b) Feed selling above the average in price per cwt. may produce broilers at a lower cost per pound than one with a lower price per cwt. As an example, it was found that the most expensive feed under study ($2.55 per cwt.) produced broilers costing 1.2 cents less than average. Kind and quality of feed, accordingly, is more important than cost per cwt., other things being equal.

(c) Increasing the feeding space per chick may improve feeding efficiency due to fewer pounds of feed being required per pound of broiler sold and thereby reducing the per-pound cost.

Producing Pullets for Egg Laying Tests

By E. F. Stanton
Supervisor, Florida Egg Laying Test

Condensed from a News Release

IN checking over the records of the Florida test for the past 10 years, we find that birds making the best records among light breeds are hatched in or near the month of April. The better pens of heavy hens are produced mostly a month or two earlier. It does not pay to push the birds too fast for maturity or early laying. They should have a good body before starting to lay; then they can stand the strain of heavy production better and also lay a larger egg than if pushed with high protein feeds and start laying too young.

Birds hatched too early will probably lay a few eggs in late summer, then stop and molt. Those hatched later than the above dates will not be laying in time to get off to a start on October 1st, as they should if they expect to make a showing in a test, or in the laying house at home.

Reducing the Mortality

We can remember when the death rate in tests did not run over 15 per cent year after year. We have been pleased to note that the death rate in the Florida Test has gone down each of the past four years—dropping from a high of over 28 per cent to 21.6 per cent last year.

In checking over the results on last year's test, we find, however, that 31 pens out of the 96 ended up the year with less than 10 birds alive, out of the original 13. The average was a little over seven birds per pen alive. These 31 pens stood a death rate of 41.5 per cent, with 167 dead birds. The remaining 65 pens, with 103 dead birds were subjected to a death rate of only 12.2 per cent. As a contest manager, I am not going to be satisfied until I can end a contest year with a mortality something close to this on the entire test.

A breeding program that will give good results in egg laying tests will also give good results on a commercial plant.

Selecting the Breeders

Extreme care should be used in selecting the birds which will be used for producing pullets for egg laying tests. The hens used should lay eggs averaging well above 24 ounces per dozen. These eggs should be of good shell quality and free from tints. The hens should be in their second laying year at least. It would be preferable to have birds with three years of trapnest records

News Release Issued by Florida National Egg Laying Test

back of them, showing 200 eggs for each year.

The final test for all breeders should be a check up on their progeny. It has been shown that fertility, hatchability and livability are closely connected and no birds should be used that do not rate high in all three of these requirements. A number of the poor showings of the past, especially along the line of a heavy death rate, can be traced directly to using birds in the breeding pen with a high egg record, but which had never been checked as to records on progeny. It cannot be truthfully said that high egg records mean a high death rate; neither can it be said that high record hens are poor breeders. Use hens whose records show a good many pullets alive and laying at the end of the laying year. These daughters should have a fairly high average in egg production and egg size.

All of the above requirements should be remembered in the selection of the male bird to head this mating. Where an outstanding record was made by a certain pen in the Florida Test, we usually found that an outstanding male sired these birds. A male that has produced high record daughters from a number of hens is especially valuable. One instance shown last year indicated that a male loaned by one breeder to another sired a pen of pullets with 100 per cent livability, ending up the year with an average of 226.3 eggs and 234.5 points per bird.

The poultryman who loaned this bird to a neighbor had very poor results with his own entry, ending the year with four live birds out of 13, with an average of 109 eggs per bird with less than 112 points each. As soon as the results were noted, this good male was brought back home and progeny from a mating in which he was used are now making an outstanding record in the Florida Test. A male of this kind is worth $100 to anyone who is interested in improving a flock.

Resistance to Disease Inherited

A number of the experimental farms in the United States have shown in the last few years that losses from certain diseases may be laid conclusively to the use of certain individuals in the breeding pen. In other words, when raised under identical conditions, and in the same flock, progeny from certain males and hens showed 100 per cent livability at the end of one or more laying years where progeny from other birds ended up with one-half or more dead.

It has also been shown that baby chicks bought from two different sources and raised in the same house gave results comparable with the above. We cannot stress this factor with too much emphasis. I firmly believe that it controls this high death rate to a very large extent. The disease is not inherited, it is a resistance, or a susceptibility to the disease that is inherited.

Those who have no means of trapping or progeny testing should buy males for breeding work from some breeder who does know the history of the males sold. You can never get the desired results in increased egg production, good egg size, or livability until you use birds that are from progeny tested parents, or the parents themselves.

Follow a Proven Method

It does not pay to experiment in raising chicks. If you have used a system with good results, do not let anyone talk you into changing over to some other one. I believe it best to use a ready mixed mash, for chicks eat little feed up to the time they can be changed over to a growing mash, and it is safer to use the commercial feeds than to mix them yourself. You may save on the growing mash and laying mash later, where large flocks are kept, by mixing it, but not on starting feeds.

Have a reliable source of heat for your brooder. Chilling is a serious handicap to any lot of chicks and trouble is sure to follow. There is no best method of caring for chicks except to take the best care of them that you possibly can, then you can expect good results.

Why Hens Scratch Litter to One Part of the House

When the fowls scratch the litter to one part of the house, leaving other parts bare, there is something wrong somewhere. It may be the floor is not level, in which case the litter works to the lowest part.

Or it may be caused by an unequal distribution of window space. A hen never scratches with her back to the light; she always faces it in order to search for tid-bits in the area she has turned over. So if all the light enters the house from the front, the litter quickly finds its way to the back. One or two small windows low down on the rear wall will remedy matters.

—Eggs, London, England, Jan. 24, 1940.

❡ AN OREGON study showed that the average poultryman walks 223 miles per year to do his chores, and that one-third of this could be and was reduced through careful, early planning. Some people might "walk a mile for a Camel," but who wouldn't save over 74 miles by just a little planning? Plan your work and then work your plan.

—Edward S. Walford, Poultry Item, March, 1940.

Proven Sires Lead to Improvement

By Clarence E. Lee
Beacon Milling Company

Condensed from Poultry Item

IF I were starting a foundation flock, I don't think I'd care very much whether anyone had trapnested the birds I intended to try out as breeders or not!

What I would want would be the egg records of the daughters of these birds and, if possible, I'd like to get trapnest records of all the daughters that hatched from each mating, not just the best of them. Furthermore, I would like to have the hen mated with two or three different males during the year and these males mated with other hens too so that the value of each individual could be better calculated.

Many a 300-egg hen has been unable to pass on any very desirable characteristics to her daughters. I once bred a pen of Rhode Island Reds that I believe still hold the short time record at the Storrs Egg Laying Contest, birds that came within an ace of cleaning up all the other Reds in the contest that year and would have done so except that they were late hatched and started production a month late. And these birds were bred from two hens, one with a record of 220 and the other 221 eggs in their first year. The pens made an average for 51 weeks of almost 254 eggs per bird and one pullet shelled out 298 eggs in the 51 weeks, was still going strong at the end, and her total was well over 300.

Of course, the answer was the male, in all probability, but the hens themselves may have been able to produce far better offspring than indicated by their own records. We planned to mate these same birds with another male the next year but unfortunately an epidemic of laryngotracheitis permanently removed them from the scene of events.

In the dairy world it has long been a common saying that "The sire is half the herd." As a matter of fact, any such generalization as that doesn't mean very much because a good sire who transmits the desired qualities to his offspring may be a lot more than half the herd, he may be two-thirds or three-quarters or some other proportion because of his prepotency in throwing the desired qualities.

Professor Gowell at the Maine Experiment Station, many years ago, found that trapnesting a flock of Barred Rocks and breeding from the best layers year after year did not result in any increase in egg production. And in spite of the fact that Dr. Raymond Pearl, at that time connected with the Maine Experiment Station, published in 1910 a paper on the breeding of dairy cattle, which pointed out the necessity of adopting some type of "progeny test" breeding program, the majority of poultrymen, like the majority of dairymen, seem to have gone on breeding by pedigree and with the pedigree evaluated on the basis of production of the females themselves and not of their daughters, except incidentally and individually as they appeared in a single individual pedigree.

The Item Publishing Company, Sellersville, Pa.
(Poultry Item, Jan. 1940)

Progeny Records Tell the Tale

In 1937, Monro and co-workers in Canada, studying the records from seven Dominion experimental farm flocks, concluded that there was only a very little correlation between the production of a hen and the average production of her daughters. These records further concluded, on the basis of these official records, that in flocks where no hens of less than 200-egg first year records were used as breeders, selection of these hens on the basis of their trapnest records had proved of very little value in identifying and intensifying the ability to transmit high egg production.

Petrov, in 1935, analyzing the records of a flock of White Leghorns at Cornell University, concluded that all advance shown in egg production from 1917 to 1927 occurred entirely as the result of the improvement during this period in maintenance, rearing, and other environmental conditions such as feeding, etc., rather than as a result of breeding.

It has been demonstrated again and again not only by many scientific workers but by practical poultrymen, that the record of a hen cannot be used as any indication whatever of her ability to produce daughters that will lay any particular number of eggs, even very approximately.

Neither can the record of egg production of the sires' dams be used as a safe indication of the breeding value of the sire.

It may also be noted that the production of the daughters of a given hen is no indication, necessarily, of the production which will be obtained from the daughters of another hen that is full sister to the first, even if sired by the same male, and much less so if sired by a different male, even if that male is a full brother to the first.

The Proven Sire

In other words, the value of a sire may not be known except from the records of his daughters. By the records of the daughters produced from a large number of matings, we can check on the approximate value of the sire as a breeder. It is not, however, possible to determine the results that will be secured by the mating of this sire to any particular hen in advance, unless we have a considerable number of daughters already produced from this same mating.

A. L. Hagedoorn, the well known Dutch poultry scientist, has sponsored a breeding program in Holland which selects breeders on the basis of the production of the progeny without ever bothering to trap the hens used for breeding during their first laying year at all. When a mating is found which gives high production and other desirable characteristics, the birds involved in the mating are retained and used as long as they are vigorous and healthy.

Value of a Mating

The value of a mating is not in the production of one or two phenomenal individuals but rather in the ability to produce a uniformly good offspring. Individuals selected for breeding should be selected on the basis of their ability to produce a large number of progeny which give high performance and, in order to test this, it is of course necessary to retain and raise every bird that lives from each mating.

However, getting into all the intricacies of progeny test breeding, particularly by the "sib" or family method is not a job for the average poultry breeder, being both too difficult and too complicated.

As a matter of fact, nearly 30 years of observation of this commercial industry has convinced the writer that what we need in this country most are a relatively few large breeding farms which will apply sound scientific methods to the production of better stock which may then be "duplicated" by the other 99 per cent of the so-called "breeders."

Too Many "Breeders"

There are altogether too many poultrymen, in our opinion, who are trying to carry out elaborate breeding programs and who are failing either because of lack of scientific training and knowledge, or lack of capital, or both. Many of these same breeders, however, could make a satisfactory income, save a tremendous lot of worry that is hastening them into old age, and be of greater service to the poultry industry, in our opinion, if they simply carried on the reproduction of a well-bred strain, going back to the source from year to year, as necessary, for a little seed stock to keep their breeding flock up to par.

One difficulty today faced by all breeders is that of getting a price for their chicks, in sufficient numbers, to pay their high overhead cost of breeding and give them a decent income. If we restrict the number of real breeding farms and let the rest be just "reproducers," there will be no difficulty for the smaller number

of real breeders in securing a fair price for their stock.

Quick Flock Improvement

Assuming that you have a flock and wish to breed from it with reasonable assurance that you will get a quick improvement, how should that be done?

Unquestionably, the best way is to select 15 or 20 hens, 15 if you are dealing with a heavy breed and 20 if you are dealing with Leghorns, and then buy a progeny tested sire to mate with them.

It is true that this progeny-tested or "proven" sire may not do as well with your particular hens as with some other strain and so of course he can't be said to be actually "proven" until you have tried him with your own birds, but if he has been found outstanding prepotent on other hens, even of a different strain the previous year, it is likely that you will find him a valuable breeder with at least some of your females.

Let's see what we might expect in differences between the daughters of different sires, taken on more or less of a flock basis, as shown in Table 1, given by Dr. F. B. Hutt of Cornell University in his address before the conference on the National Poultry Improvement Plan in Chicago last year.

It would certainly make many dollars difference to the poultryman whether he used males of the breeding quality of No. 11 shown or of the breeding quality of No. 16. The daughters of No. 11 showed 30 per cent mortality on the range, 58 per cent mortality to January 1st of their first year, and 67 per cent mortality to April 1st, with an average production of eggs in their first laying year up to January 1st of 23 eggs per bird, whereas the daughters of No. 16 showed 5 per cent mortality on the range, 8 per cent up to January 1st, and 14 per cent around to April 1st, and they produced an average of 61 eggs per bird in the first laying year up to January 1st. All these chicks ran together on the same range and were spread through the same hatches so that the differences must be interpreted as due to inheritance.

Table 2, taken from the records of Pennsylvania State College, furnished through the courtesy of Dr.

Table 1.—Comparison of Daughters of Six Different Sires

		Per cent of mortality			
Males	Hatch per cent	On range	To Jan. 1	To Apr. 1	Eggs to Jan. 1
13	80	19	15	28	36
14	79	21	24	37	40
101	90	5	7	14	34
16	81	5	8	14	61
1	79	12	30	39	57
11	77	30	58	67	23

Table 2.—Comparison of All Progeny of Six Different Plymouth Rock Sires Used in Matings, Spring of 1938

Sire No.	No. Progeny Housed in Laying Pens	Av. Body Weight at First Egg Pounds	Av. Days to Sexual Maturity Days	Av. Egg Production Eggs	Av. Egg Weight Ounces	% Flock Reduction Per Cent
T-28m	102	4.7	176	235	23.7	24.5
W-2m	57	4.9	180	200	23.9	28.1
W-3m	105	5.2	185	213	24.2	20.0
W-4m	62	5.4	191	197	25.3	19.4
W-5m	117	5.0	168	231	23.8	17.1
W-6m	28	4.8	175	227	24.1	17.9

D. R. Marble, shows the comparison of the progeny of six different males.

Again we can see that it would make a considerable difference to a poultryman's income whether he secured males having a breeding quality as shown by sire W-2m instead of sires of the quality of W-5m. The first sire produced only 57 pullets; these took 180 days to mature, on the average, and while they showed an average egg production of 200, the per cent of birds which had to be taken out was 28.1 per cent while the second sire produced 117 daughters which took only an average of 168 days to mature, produced an average of 231 eggs per bird and showed a flock reduction of only 17.1 per cent.

Table 3, taken from records of the U. S. Dept. of Agriculture, shows another example of what differences in sire's breeding quality may mean to the poultryman.

Perhaps the most noticeable fact is that the daughters in neither the Rhode island Reds nor the White Leghorns, averaged to lay as many eggs as their mothers. However, that is a common occurrence with breeding stock of fairly high production. It should not be taken to mean that none of the daughters exceeded the production of the mother.

Secondly, it would be interesting to see the individual records of each daughter in each group. Some groups may have consisted of a few phenomenal birds and a few very poor ones which, of course, would drag the average down. Others may have consisted of all or nearly all good birds of much more uniform production. Of course, from a breeding standpoint it is very much better to select sires that throw more uniform daughters rather than sires which tend to produce a few phenomenal individuals and a larger percentage of undesirable ones.

It's the Way They "Nick"

It is interesting to note that male No. 334, which was used two successive years, gave 37 daughters with an average egg production of 211 eggs when mated to 231-egg dams, whereas when mated to 242-egg dams the next year he produced only 32 daughters with an average of 205 eggs per bird. A significant result however, is the fairly close average production of the daughters in spite of the fact that two groups were used and the fact that the daughters from the lower record dams averaged higher than the others. A breeder would say that sire No. 334 "nicked" better with the 231-egg dams than he did with the higher record birds.

Table 3.—Average egg production of daughters of different R. I. Red sires mated to R. I. Red dams that laid 200 or more eggs, and of different White Leghorn sires mated to White Leghorn dams that laid 225 eggs or more.

	RHODE ISLAND REDS				WHITE LEGHORNS		
Sire No.	Average egg prod. of sire's mates	Number of daughters	Average egg prod. of daughters	Sire No.	Average egg prod. of sire's mates	Number of daughters	Average egg prod. of daughters
10105	242	49	216	3	248	45	229
173	223	48	219	250	243	37	227
*334	231	37	211	249	243	71	206
*338	238	31	206	252	247	48	200
*334	242	32	205	91	254	46	199
*330	246	46	201	100	248	59	193
*330	250	38	195	259	243	69	185
200	243	52	193	254	237	51	179
*338	250	60	192	10106	239	46	179
351	232	75	171	50	228	49	168

* These sires were used in 2 consecutive breeding seasons.

Obviously, such a mating as that of sire No. 351 with the 232-egg dams which produced 75 daughters but showed an average production of the daughters of only 171 eggs per bird, indicates that this mating did not "nick" very well, or in other words, the sire did not have the ability to transmit high production to his daughters. In general, the value of a sire can be computed to a considerable extent by ascertaining how much of an improvement in egg production is shown by his daughters over their dam, if any.

Certainly the poultryman who used males of the breeding quality of R. I. Red No. 351, or White Leghorn No. 10106 or, White Leghorn No. 50, would find a big difference in his cash income at the end of the production year, as compared with results from the use of some others.

It is quite true that we cannot afford to overlook the feminine side of the family, but it is quite apparent that one of the best, and certainly the first step, that a young pullet could make toward fame would be to pick the right grandfather!

For greatest and surest improvement in flock production, put your money into proven sires, birds which have been progeny-tested.

POULTRY RESEARCH

Relation of Age of Layers to Production and Egg Weight

The relation of age of layers to egg production and egg weight in a flock of White Leghorns for a 10-year period was studied by Thomas B. Clark, West Virginia Agricultural Experiment Station (Poultry Science, Vol. 19, No. 1).

Egg production declined at the average rate of 19 per cent each year as compared with the preceding year. High producing birds in this experiment lived as long as or longer than the low producing birds, suggesting that the "strain" of first-year egg production did not have a depressing effect on longevity. No relationship was found between percentage change in egg production from the first to second years and the length of life.

Egg weight was greater in the second year than the first year, remained at approximately the same level during the second and third years, and then decreased gradually with age up to the tenth year.

Production of Double-Yolked Eggs

That approximately 65 per cent of all double-yolked eggs produced result from the simultaneous development and ovulation of two ova, is revealed in studies by R. M. Conrad and D. C. Warren at Kansas Agricultural Experiment Station (Poultry Science, Vol. 19, No. 1). Another 25 per cent result from the simultaneous ovulation of two ova which have developed in normal sequence, one of which would normally be ovulated a day later. The remaining 10 per cent may result either from the successive development and simultaneous release of two ova, one of which should have been released a day earlier, or from an ovum held in the body cavity for a day after ovulation and picked up by the oviduct along with the ovum released the succeeding day.

The investigators report that the stimulus to ovulation probably is nervous or glandular, and that individual follicles holding the ova develop a susceptibility to the stimulus as they grow larger, so that normally only the largest follicle is susceptible to the stimulus when it comes.

Limiting Feed Intake Reduces Egg Production

Two experiments were conducted by Burt W. Heywang at the Southwest Poultry Experiment Station, Glendale, Arizona (reported in Poultry Science, Vol. 19, No. 1), to determine the effect of restricted

feed intake on egg weight, egg production and body weight among White Leghorn pullets.

Heywang found that in the first of the experiments, each of which lasted a full year, reducing feed consumption 12.5 per cent cut down egg production by 31 per cent, and reducing feed consumption 25 per cent cut down egg production by 54 per cent.

In the second series of tests, layers which had free access to all the feed they could eat averaged 171 eggs per bird. When feed intake was cut 12.5 per cent, production dropped to 120 eggs, and when feed intake was reduced 25 per cent, average egg production dropped to 85 eggs per bird.

The restrictions in feed intake did not affect the average size of eggs laid or the average body weight of the birds in either experiment.

Uncured Corn and Digestive Troubles

New, uncured corn has been frequently reported as the cause of digestive disturbances and even heavy losses in flocks of chickens. Observations by G. Nichita and coworkers at the French Zootechnical Institute, published in Comptes Rendus de la Societe de Biologie (Vol. 121, No. 6) tend to support such assumption. On the other hand there is equally reliable evidence from other sources indicating that uncured, new corn produced no untoward results. In the light of such contradictory information one might postulate that the toxic factor or agent is present only under certain, as yet unknown, conditions.

—Carl H. Schroeder, Everybodys Poultry Magazine, March, 1940.

Feeding Grasses to Layers

The comparative value of green feeds in the poultry ration was studied by Clarence L. Gish and Loyal F. Payne at Kansas Agricultural Experiment Station (Poultry Science, Vol. 19, No. 1).

Pullets fed condensed buttermilk and dehydrated grass had a significantly higher egg production than pullets fed cereal grass or pullets fed dehydrated alfalfa meal and condensed buttermilk. No differences in the three groups were shown from the standpoint of egg size, hatchability or livability.

Pullets fed cereal grass as the only supplement did not attain as large a body weight, but were able to maintain it throughout the entire year to a better advantage. Pullets fed cereal grasses, both in fresh and ensiled forms, gave larger net returns than those fed buttermilk and dehydrated grass and those fed buttermilk and alfalfa meal, but this advantage was partly overcome by the production of olive colored yolks, commonly called "grass eggs," by 45.9 per cent of the hens.

Pullets fed condensed buttermilk plus dehydrated grass and those fed cereal grass alone did not have as severe a winter pause and were able to overcome it in less time than pullets fed alfalfa meal and condensed buttermilk.

Chicks With Slipped Tendon Have Difficulty Absorbing Manganese

Slipped tendon or perosis — a disease which a few years ago took a heavy toll of chicks grown in battery brooders—now is understood in a general way, although sizable gaps remain in our knowledge concerning details of its operation.

These are the outstanding considerations:

1. The cause of slipped tendon is too much calcium phosphate, contained in bonemeal in rations low in manganese.

2. The practical way to avoid the disease is to feed no more bonemeal than necessary, and to include ¼ lb. or slightly more of manganese sulphate in each ton of mash if the bonemeal content is fairly high.

3. As for mechanics of the disease, the indicated explanation is that too much calcium phosphate interferes with absorption of manganese, so that extra manganese must be fed if chicks are to assimilate enough of it.

Analyses of A. C. Wiese, C. A. Elvehjem and E. B. Hart have shown a reduced manganese content in the tissues of birds suffering from slipped tendon. Manganese in the bone was 2.5 milligrams per gram, in comparison with 4 milligrams in normal birds, while the corresponding figures for liver were 0.47 and 1.46 milligrams respectively. Injection of manganese into the birds immediately raised the bone manganese.

Previous work has shown that phosphatase of the blood and bone are low in birds with slipped tendon, but exactly why low phosphatase and low manganese bring on slipped tendon can only be cleared up through further study.

In this project has been demonstrated with chicks one principle which Hove, Elvehjem and Hart have brought out with rats,—namely, that feeding added zinc increases phosphatase activity.

—Bul. 446, "What's New in Farm Science," Wisconsin Agricultural Experiment Station.

Wheat Germ Oil Fails to Show Curative Value in Fowl Paralysis

Wheat germ oil had no curative value in fowl paralysis (leucosis) in a test conducted by E. P. Johnson, Virginia Agricultural Experiment Station, reported in the Journal of the American Veterinary Medical Association for March, 1940 (Vol. 96, No. 756). Birds with varying degrees of fowl paralysis failed to respond after receiving wheat germ oil intramuscularly twice a week for a month.

An effort was made to determine whether or not wheat germ oil possessed any preventive value in connection with fowl paralysis. Ten chicks which had been receiving wheat germ oil in the ration for four weeks were given injections of leucotic material at six weeks of age. Another group of chicks, which had not received wheat germ oil in the ration, were given similar injections.

Three of the birds receiving wheat germ oil developed forms of leucosis at three, five and eight months of age, respectively, after being given injections of leucotic material. Just two of the birds in the lot which did not receive wheat germ oil developed symptoms of fowl paralysis.

Ovarian Hormones May Regulate Calcium Level in Hen's Blood

Not yet completely solved is the mystery of why the blood of pullets shows a steep rise in calcium content as the birds near egg production, but evidence now indicates that ovarian hormones control the calcium level. In the past it was thought that hormone from the parathyroid gland might be concerned.

Findings made by J. B. Christiansen, J. G. Halpin and E. B. Hart include these:

1. Egg production fell off when hens were fed smaller than optimum amounts of calcium or excessive amounts of ferric chloride. Ferric chloride presumably ties up the phosphorus in the digestive tract.

2. Heavy egg production was accompanied by a constant but high level of calcium. Calcium was taken from the blood to produce egg shells.

3. The level of blood calcium varied with the activity of the ovary. This held true regardless of what factor limited egg production.

The Wisconsin investigators advance this theory to account for some of the obscure processes concerned with control of the calcium level: A peculiar protein named vitellin (which is laid down in egg yolk) may combine with calcium coming into the blood to keep it from diffusing, but nevertheless available for shell formation.

—Bul. 446, "What's New in Farm Science," Wisconsin Agricultural Experiment Station.

Vaccination With Bacterin Cuts Losses from Duck Septicemia

Vaccination with a bacterin prepared from cholera organisms effectively reduced the losses from duck septicemia under practical farm conditions, according to Charles S. Gibbs, Lederle Laboratories, in the Journal of the American Veterinary Medical Association for February, 1940 (Vol. 96, No. 755).

A flock of 2,000 ducklings was vaccinated at 4 weeks of age, while another 200 were toe-punched and kept as uninoculated controls. Both the vaccinated and unvaccinated birds were permitted to run out of doors with other ducks that were dying of cholera. Mortality in the vaccinated ducks was 15 per cent compared to 30 per cent for the unvaccinated birds.

Botulism Toxin Not Absorbed by Crop of Chicken

In performing autopsies on chickens which died of botulism as a result of eating decaying animal and vegetable matter, E. E. Leasure and V. D. Foltz, Kansas Agricultural Experiment Station, observed that the crop often contained material suspected of causing this condition.

To determine whether or not the toxins are absorbed by the crop, these investigators made injections of botulinus toxin to normal hens and also to hens in which the crop was tied off to prevent the passage of fluid or food. Similar groups of hens, with and without the crops tied off, were fed corn containing the toxic material.

The results, reported in the Journal of the American Veterinary Medical Association for February, 1940 (Vol. 96, No. 755), indicate that the toxin of botulism is not absorbed in the crop, but at some point beyond the crop in the digestive tract. Those hens with the crops tied off did not get botulism.

Rough Handling and Hatchability

Hatchability was not adversely affected by violent shaking of eggs after 1, 2 and 3 days of incubation, respectively. Even forceful shaking for 6½ hours did not impair hatchability. The eggs subjected to such treatment yielded 80 per cent chicks from fertile eggs.

In the same test, P. Seck of the Zoological Institute of the Frankfurt University, found that eggs, purposely packed very carelessly and driven in a small, cheap car over bad cobblestone roads, hatched 87 per cent of the fertile eggs. Similar ill treatment applied after 6 and 12 days of incubation failed to demonstrate any considerable damage to the eggs. There was evidence, however, that the germ is more sensitive to "rough handling" in its later stages of development. (German Archive for Poultry Science, Vol. 13, No. 12).

—Carl H. Schroeder, Everybodys Poultry Magazine, March, 1940.

Manganese and Sunlight May Aid Hatchability of Winter Eggs

The hatchability of winter eggs can be much improved by adding a small amount of manganese to the mash when soybean oilmeal is the only protein supplement in the ration, according to findings made by J. B. Christiansen, J. G. Halpin and E. B. Hart.

On the other hand, feeding manganese has little or no beneficial effect on hatchability in spring and summer. Records indicate it is the amount of direct sunlight the hens

receive—not the temperature—that affects their need for manganese.

The relation of sunlight to the utilization of manganese is still unexplained, but there seems no doubt that there is some connection. Not only this work on hatchability, but also experience with slipped tendon in chicks bears that out. Slipped tendon usually does not occur when chicks are allowed to run in direct sunlight, but is often troublesome when the birds are kept in battery brooders out of the sunlight, and at such times it can be largely prevented by feeding extra manganese.

In the hatchability studies, carried on for two years, this ration was fed: yellow corn, 45 parts; wheat bran, 15; middlings, 15; alfalfa leaf meal, 5; soybean oilmeal, 16; limestone grit, 1.5; granite grit, 1.5; cod liver oil, 1; iodized salt, 0.5 lb.

The average hatchability of fertile eggs produced on this ration from September to April was only 48 per cent. Corresponding groups of hens receiving small amounts of manganese (added so the soybean oilmeal ration contained 85 parts per million of manganese) produced eggs with an average hatchability of 62 per cent. During spring and summer, however, the hatchability of eggs from the two groups was quite similar, averaging 70 per cent and 75 per cent.

Statistics show the percentage of hatchability rose and fell directly as the total hours of sunlight during the 2-week period before the eggs were laid.

Exactly what sunlight contributed to bring about this effect is not known, but it seems certain that vitamin D was not the critical factor. That was indicated by a number of experiments. Moreover, the ration contained 1 per cent of good cod liver oil, an amount which experience has shown contributes plenty of vitamin D, even in winter.

Whether adding manganese would improve the hatchability of winter eggs produced on rations containing milk or meat scraps is not yet known, but it is not likely that it would yield as marked benefits as the feeding of manganese in a soybean oilmeal ration.

—Bul. 446, "What's New in Farm Science," Wisconsin Agricultural Experiment Station.

Egg Whites Must Contain Plenty of Riboflavin for Hatchability

What seems to be one of the most important factors affecting hatchability of eggs has been tracked down by R. W. Engel and P. H. Phillips, whose work has been supported in part by the Wisconsin Alumni Research Foundation.

These men have found that eggs will not hatch unless their whites are rich in a vitamin called riboflavin. Because the amount of riboflavin in eggs is determined by the amount in feed given laying hens, it follows that rations must contain plenty of riboflavin if hatchable eggs are to be produced. Riboflavin is abundant in fluid or dried milk, whey, meat scraps and alfalfa meal, but low in soybean oilmeal and grains.

In the light of what has been learned now, it seems certain that one of the commonest causes of hatching failure – that of embryos dying shortly before the eggs are to hatch – often is brought about by lack of sufficient riboflavin in the egg whites. Engel and Phillips found that when embryos from eggs produced on rations low in riboflavin were examined on the 18th day of incubation, they showed degenerated nerves exactly like those of chicks suffering from "curled toes" or neuromalacia—a disease known to be caused by a shortage of riboflavin.

Furthermore, they learned that eggs which ordinarily would not hatch—because they were produced on rations too low in riboflavin—could be made to hatch if they were injected with a water solution of riboflavin before incubation.

Eggs would practically never hatch if their whites contained less than 2.5 micrograms of riboflavin per gram. Hatchability was good when the egg whites contained at least 3 micrograms of riboflavin per gram, and best of all when the riboflavin content was 4 to 5 micrograms.

However, lack of sufficient riboflavin is not always the cause of chick embryo's deaths. Another is chondrodystophy, a tendency to produce monstrosities with shortened legs and abnormal beaks. Trials showed that adding a small amount of manganese to the synthetic ration used here prevented this trouble.

In addition, the work of Engel and Phillips brought out these findings:

1. Hens did not lay well on low riboflavin rations, and stopped laying entirely when the deficiency became serious.

2. Hens lost weight on rations low in riboflavin.

3. That riboflavin was the critical factor is very clear. Hens in the control groups, getting the same rations as the others except for added riboflavin, produced a satisfactory yield of eggs with good hatchability, and the embryos in these eggs did not show nerve degeneration.

In passing, it is well to point out that laying rations containing soybean oilmeal as the only protein supplement also usually result in rather low egg production and poor hatchability. Work in other projects at this Station has shown that lack of sufficient riboflavin is the principal shortcoming of soybean oilmeal. In the light of these facts, the research of Engel and Phillips strengthens the chain of evidence that it is extremely important to supplement soybean oilmeal rations with materials rich in riboflavin.

—Bul. 446, "What's New in Farm Science," Wisconsin Agricultural Experiment Station.

Ducks in Laying Cages

From the University of the Philippines comes an interesting report of the production of 60 ducks kept in battery laying cages for a period of one year. They were placed in the cages when about four months of age, before they laid their first eggs.

Feed consumption averaged 124 lbs. per duck per year, and 6.8 lbs. for each dozen eggs produced.

The ducks stood confinement very well, and only three died during the year.

Egg production varied from a low record of 110 eggs to a high record of 320 eggs in 365 days, the average for all 60 ducks being 215 eggs.

The average age at first egg was 182 days, with a range from 141 to 232 days.

The results were more favorable than those obtained with ducks kept in outdoor laying pens, when measured by egg production, mortality, and feed cost of egg production. It is suggested by the authors that the use of battery laying cages for ducks may be practical on a commercial scale.—The Philippine Agriculturist, Vol. 28.

—L. E. Card, Poultry Tribune, March, 1940

TURKEY in the snow isn't nearly as common as turkey in the straw and so Thomas Oldham, of Tulsa, Okla., investigated when he saw a turkey hen with only her head protruding from a snow bank.

Under the hen were five eggs and seven turkey poults. The eggs were frozen and four of the seven offspring froze to death before they could be sheltered, but the hen is doing nicely.

Farmer Arthur Gowen, on whose land the incident occurred, said he had been raising turkeys for eight years and this was the first time a hen had hatched eggs in winter.

—Newspaper Article.

POSTMAN Claude Dye, Somerset, Kentucky, frequently has had differences with vicious dogs, but he met a new problem when a pet game rooster, feathers bristled for action, greeted him on the steps of a Somerset home. The postman succeeded in placing the mail in the box at the home—after suffering two spur wounds on his right leg.

ENGLISH poultrymen who are having difficulty in obtaining sufficient feed for their poultry, are being urged to put their poultry houses to use by growing mushrooms in them, according to Eggs, London, England, Feb. 10, 1940.

Chick Sexing Has Made Rapid Progress

By H. L. Shrader
Senior Extension Poultryman
U. S. Dept. of Agriculture

Condensed from Everybodys Poultry Magazine

IN the romance of big business, history tells us of a merchant prince who built his business on the slogan—"The customer is always right." Back in 1933, when the sexing of day-old chicks on a commercial scale was introduced into this country, there were many hatchery operators who were greatly perplexed and even wondered if the customers were always right. Today, they still consider it a problem, but over 25 per cent of the hatcheries in the United States have added the sexing department to their merchandising program.

Most Sexing on Pacific Coast

The sale of sexed chicks is most common in the Pacific Coast States where in 1939 almost two-thirds of the hatcheries report the sale of sexed chicks. This is the area where the great majority of chickens are White Leghorns. The practice of sexing baby chicks started on the West Coast and from there has gradually spread eastward. The demand is growing.

The Agricultural Marketing Service of the U. S. Department of Agriculture reported that there were around 58 per cent more sexed chicks sold in 1939 than in 1938. The total volume of all chicks sold in 1939 was greater than the preceding year, but the increased volume in sexing was much larger than the increase in total numbers of chicks produced by hatcheries.

Favored for Convenience

Customers want the sexes separated mostly for convenience and economy. A commercial poultry farm wants only Leghorn pullets; a commercial capon farm wants only heavy breed cockerels; while a broiler plant will take either or both. The harassed hatchery operator must price his chicks accordingly and juggle his orders so that he comes out even, because old Mother Nature keeps on producing approximately half of each sex with uniform regularity.

Do you wonder that hatchery owners sometimes speak of this sexing problem as a headache? The price scale for light and heavy breeds must necessarily be different. With all this criss-cross of orders, sexes and breeds, there are very few chicks that do not find a waiting customer. These are usually Leghorn cockerels so the price of Leghorn pullets is usually put high enough to cover the price of their unwanted brothers. The number of cockerels destroyed during the 1939 season ran from less than 1 per cent in some months to 3.2 per cent in other months, of the total chicks hatched.

No Harm to Chicks

What fears do customers have about sexed chicks? The most common one expressed was that sexing hurt the chicks, but that has been repeatedly disproven. In the hands of a skilled operator the examination can cause no more injury than any other handling. Some purchasers are skeptical about the accuracy of sex segregation, but guarantees by hatcheries have been backed up with adjustments.

Now and then one hears of some mistake in the sex of the entire shipment. One suggestion has been made to help prevent such mixing of orders that cockerels be shipped in blue boxes and pullets in pink ones just like the color scheme used in birth announcements. The Federal Trade Commission has issued fair trade practice rules that cover the accuracy of the sex guarantee. Such rules do much to establish the confidence of skeptical purchasers.

Sexers Pass Examinations

The rules of ethics of the International Baby Chick Association include the subject of making good any advertised guarantee in regard to sex segregation. This association has also served as a clearing house for information on employment of sexers. They have promoted efficient work by arranging for examinations for individuals. These examinations are held by a disinterested official and consist of handling 200 chicks; the accuracy of the separation of sexes is checked by a post mortem. The applicant is not permitted to injure or kill any chicks; the time for handling is noted. When a grade of 94 per cent or over is made, a "certificate of proficiency" is issued.

When chick sexing was first introduced, there was an attempt to create an atmosphere of mystery and magic about the process. This has been entirely dispelled and the subject is now taught in regularly conducted schools. Chick sexing is founded on scientific findings as to the size, shape and location of the rudimentary sex organs. It is a very exacting and confining task and requires excellent eyesight, skillful manipulation of the fingers and unlimited patience.

Speed and Accuracy Essential

Speed and accuracy are the chief assets of an expert sexer who can handle a thousand or more chicks per hour with practically no mistakes.

The demand for skilled sexers has been very great and numerous spe-

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(Everybodys Poultry Magazine, March, 1940)

cialized schools have been established. The applicant must handle thousands of chicks and even then only a small percentage of the trainees ever become really skilled in the art. It is a seasonal occupatoin and the problem of satisfactory employment during the "off season" has been difficult to solve. Some hatcheries have certain of their regular employees attend these schools while other hatcheries contract with a chick sexing association for all work in this department.

"Auto-Sexed" Chicks

When certain breeds of poultry are crossed, the cockerels and pullets can be separated by the appearance of the down on the baby chicks. In England they call these "auto sexed" chicks, but the practice has not become popular in this country. Research work has also demonstrated that rapid and slow feathering strains of a pure breed can be developed and when these selected strains are crossed the sex of the chicks can be determined by the length of the wing and tail feathers. This genetic approach to sexing is used very little in this country.

The chick buyer is still the most important factor in this chick sexing movement. He pays for the service, but so long as he gets what he wants the hatchery operator will conduct his business accordingly.

A 28-YEAR-OLD gander stole the Harrisburg, Pa., Farm Show. Jim, as he is called by his owner, C. E. Brenner, Carlisle, Pa., came from South Africa with two female geese when five months old. The two females died at the age of three years, but Old Jim defies time. He now exceeds the average age for geese by almost 24 years. He is intelligent, bowing and talking to visitors with whom he is acquainted. His favorite meal is potato chips, although he doesn't frown on pop corn and ice cream. His master boasts, too, that Jim chews tobacco, never swallowing the "cud." He weighs 18 pounds.

—Poultry Supply Dealer, February, 1940.

DONALD DUCK'S country cousins—30 of them—leaving William James' farm, single-filed into northeast Philadelphia recently.

School children, turning out for lunch, began feeding the feathered troop at a busy street intersection. Motorists were halted. Two exasperated policemen fumed. Finally the supplies of bread crumbs were exhausted and the ducks departed.

"This happens every now and then," said Mrs. James gloomily when she found the ducks. "They simply like to roam."

—Newspaper Article.

Diary of a Poultryman

By P. S. White
Egg Farmer, Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

March 1—Well, the month came in like a lion, in fact, from the looks of the north house roof, it came in like two lions. This composition roofing, like we mortals, doesn't get any stronger in its old age. Sometime I am going to replace the north and east house roofs with galvanized. Then in about three years I will have to start painting them. It makes no difference how much I figure, sooner or later the same old problem of upkeep stares me in the face. I always keep some roofing on hand, but from the looks of that north house roof, I might as well get several rolls; it will take at least five rolls to do the job.

March 2 — After the first egg gathering, I took time off to go down to Jeromesville to see Howard Cobbler, the carpenter. As I carry wind storm insurance on all of these buildings, he might as well do the work of patching the north house roof. I have paid storm insurance for 10 years and now I am beginning to reap the reward, if by destruction there can be a reward. Howard will be around in the sweet bye and bye. In the meantime, if it looks like rain, I'll fix it myself.

March 4 — Dr. Kennard told me yesterday that he wanted to confer with me regarding the procedure of our school at the auction Monday night. So I went over this morning to see what the Doctor had in mind. His subject is "Raising Pullets" and he wanted to use a blackboard which meant a slight change in the lighting system. There is no use in writing on a blackboard or using charts if no one can see them. It is going to be arranged so a spot light can be thrown exactly where it should be; then no one will be left in the dark.

March 7—I have just finished tabulating the questions asked at the two Poultry Schools. We have a complete record of all questions asked, both written and oral as follows:

Management and Production—52.5 per cent
Disease—30.2 per cent
Nutrition—12.3 per cent
Marketing—5.0 per cent

The per capita question was .4 while the ratio of oral to written questions was as 1 to 12. The analysis of these figures shows that people are backward about asking questions, but are willing to write them. This eliminates the chance of

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ridicule. Management and production or making two blades of grass grow where only one grew before is still uppermost in the minds of all. Every poultryman is close to disease, so this subject is popular. Commercial feeds have taken the guess out of rations to such an extent that the average person doesn't think very much about ingredients used. The average person takes the marketing of his product as a trival matter. This data will be presented to the committee when the next school schedule is formulated. It is food for thought in more ways than one.

March 10—Bought 100 baskets of corn from Foster Silver, hauling it this afternoon. That is, all but the last load, which I brought in at 7:30 tonight. I just won't overload the little ½-ton truck, so I made it in three loads. Donnie will be home tomorrow and we will shell a bunch of it.

The corn sheller is powered with a 1-3-horse power motor, but it gives two people all they want to do to keep it going. Harold keeps the feeding table filled with ear corn, dumps the shelled corn and bags the cobs. Donnie feeds the sheller. We use the cobs to heat the block house. At night we bank the fire with coal, and during the day, the boiler is fed with cobs. A bushel and a half of cobs sure heat a great area of water and the coal bill is cut in about half.

March 14—I mopped up in the egg room before going in to the auction. I wiped the slate clean of all the undesirable eggs. There was an accumulation of 15 dozen doubles, 15 dozen cracks and 10 dozen blood spots. The dwarf eggs were thrown in the furnace. These little fellows should be thrown under the dropping screens, but for some reason they are placed in the baskets. Then they become a continual nuisance in the egg room. I am rid of the whole works, but they will accumulate again in a few days.

Harold staged a mopping up on rats last night, which probably means more room for future generations. Kid White tore out the side of the house to get a cockroach I had imported in an egg case. All together we had a bang-up clean up.

March 15—In a few days we will have to start preparing the houses for chicks. And there is so much to do before the chicks arrive. I just can't imagine where all the time has gone, for it doesn't seem to me that I have accomplished very much this winter. Been busy all the time and, more often than not, far into the night. I pride myself that I make money while other people sleep. I should say that I work while other folks sleep, because a good part of the time I don't make very much money. At least, that is the way I felt a little while ago when I dropped a filler of eggs. I was transferring a flat and filler of eggs to another case and the whole works got away from me. There wasn't much to salvage after they hit the cement floor. They don't bounce when they hit the concrete.

March 16—Dr. Winter and about 25 students were here from the University of Columbus. Harold and I had all the work up in good shape, so we would have plenty of time to talk. These college boys are wide awake, interested in every thing from red headed women to the "whichness of why." That is what I am interested in too.

Why was the air cell in one of the eggs I candled tonight in the small end? I have candled thousands upon thousands of eggs, and tonight was the first time I ever saw the air cell in the small end. I have seen them on the side of the egg, and I have seen floating air cells, but never in the small end.

March 17—I feel that I am getting behind with the work. There is a lot of pruning to do, a fence to build around the orchard and the west fence row to clean. We started on the fence row several weeks ago, but there is still a lot of work to do on it.

There was quite a discussion at the supper table tonight. It seems that it was necessary for me to apply some anti-pick remedy to a couple of birds this afternoon. I always make the application with the fingers. Then I put on my canvas gloves. When I came in for supper, I placed the gloves on the hot air register so they would be warm. Right there is where I made my mistake.

March 20 — I have established a radio in the egg room, i.e., the loud speaker is in the room. Frankly, it is great. I can now listen while I work. The wise cracks of Fred Allen, Bob Burns and Major Bowes break the monotony of candling 1, 2, 3, 4 and 3, 2, 1, 4 of "big uns" and "little uns."

March 21 — Louis Bromfield, the famed Ohio novelist, was a visitor today. After a residence in France of 15 years, he has decided to return to his native home, Mansfield. He has purchased a 400-acre farm and among other livestock, wants a flock of layers.

One of the hens in the block house started making a noise like a tobacco auctioneer. I "horsed" her out in a hurry only to find that a piece of feather was sticking in her throat. They will eat feathers—these chickens of mine. They will eat each other too, if they are not watched. I cast the old eagle eye over the whole works every time I go in a house. When they stand around innocent like, that is the time to be suspicious.

March 23—Fred Miracle, one of the local boys came over this morning to give us a hand cleaning up the west fence row. I helped him fell a couple of cherry trees and saw them in furnace lengths and then had to leave him to his own resources. There will be plenty to do, mowing briars, burning brush and splitting the larger chunks. Harold cleaned the east house between the regular work.

Another egg with the air cell centered in the small end. I am still puzzled, because it is the second time in my life that I have seen one so located. But I guess it is live and learn.

March 24—This air cell business is gradually unraveling. The same hen is doing the whole phenomena because I recognize the egg. It is a small egg weighing 23 ounces, long for the diameter and of exceptional good shell texture. I have the egg pictured in my mind to such a degree that I think I will be able to recognize it when I gather eggs from the nest.

March 25—We should have been shelling corn today, but the weather was such that I thought best to work out doors. James Mowrey brought his tractor over and pulled the under brush along the fence row. The whole works is cleaned up now with the exception of burning the brush. Fred will do that Monday morning. Then when the old fence is hauled to the dump and the wood hauled in, the job will be completed.

The faucet to the cod liver oil barrel sprung a leak during the night. This morning, I could picture in my mind a flock of vitamins scampering all over the floor when I opened the door. According to the vitamin content of the oil, there must have been millions of them on the floor. All of which means that I lost a bunch of oil.

March 28—The hen that lays the egg with the air cell in the small end is on the third floor. I recognized the egg while gathering this morning. The next step is to find out which one of the 400 hens is laying it. But Kid White wants to know what good it will do to locate the hen? Reasons she, "If the hen's 'innards' are all crossed up, what can you do about it?" I think she is right; it is a closed incident.

My egg quality is like the proverbial goose—hanging high. In fact, it is so high I can't quite understand it myself; 95 per cent of them are going in U. S. Extra Specials. Ralph Sheppard, the inspector, told me this morning that quality as a whole is not what it should be. The average hen is probably eating too much green grass for top quality.

March 30 — The regular monthly meeting of the Board of Directors of the auction was held last Monday night. At that time it was decided that several of us would attend the meeting of the Ohio Co-Operative Egg Marketing Associations to be held at Bucyrus today. This morning Mr. Lott, our president, Mr. Slutz, Ralph Treat and I made the trip. All arrangements had been made by phone, so when the car stopped for me, I just stepped in. Mr. Lott drove and he is a driver after my own heart. He didn't try to level out the road; he slowed down for the curves.

The meeting was well attended and I made new acquaintances as well as renewing the old. Paul Gasson of the Versailles outfit and I had quite a visit. Ira Martin of the Columbiana Association told me of the favorable comments they had on the talk I made over there last month.

May Eliminate the Cluck

Since the incubator has largely replaced the setting hen, poultrymen want hens that lay regularly without periodic spells of broodiness.

Scientists of the Federal Bureau of Animal Industry set out to study the physiology of broodiness and find out why some hens are less broody and thereby more valuable as layers.

The scientists found that within the pituitary gland, a tiny mechanism at the base of the brain, is the possible answer to the broodiness question. They found that the pituitary glands of genetically broody hens — those that inherit their tendency to be broody — contain more of a chemical substance known as prolactin than do the pituitaries of hens that have been bred away from broodiness.

The federal scientists believe that the relatively large amount of prolactin causes the broodiness. Now they are studying ways to breed hens with the non-broody characteristic.

—Poultry Supply Dealer, February, 1940.

THE COLLECTION of taxes from 400 million Chinese people is no easy task, especially with a long-standing war on her hands. It is reported that the wily Chinese have evolved a unique method of collecting taxes by which, under a decree of the taxation department, each peasant receives one chicken. He must take care of it and feed it well until it is marketable, when it must be returned to the tax collector who sells it, deducts a stated commission for his salary and pays the balance into the Treasury.
—**Australasian Poultry World, Jan. 1, 1940.**

Legume Silage for More Winter Eggs

By Paul W. Allen
University of Tennessee

Condensed from Poultry Item

THE value of green succulent food containing organic acids such as lactic acid, and also containing vitamins and enzymes, when added to a basic ration was well known to the dairyman years ago. Three years ago, in connection with some poultry experiments of the University of Illinois, we decided to try out some especially prepared legume silage for hens.

The weather was cold and no green material had been available for weeks. The combs of the fowls we had in our experimental poultry house did not have that healthy bright red color; their legs were not as bright yellow as of summer. Many of the birds were looking ragged from molting. Feeding time did not appeal to the poultry quite like the "gala time" which it had been under the more favorable conditions of the past summer.

It was into these drab winter conditions that we "opened up" some silage and fed it to a surprised bunch of fowls. At first they seemed doubtful; and then began eating with a zest which surprised us all. They went to work to clean it up.

Early in the summer of 1937 we "put up" 5,000 pounds of legume silage. We had found that a hen would eat approximately 4 ounces of legume silage per day and that 5,000 pounds of legume silage would feed 100 hens for six months. Our dream was more eggs during the winter.

Throughout the winter, all the silage we made remained bright, green, succulent, and strongly lactic acid. We used silage made from red clover, alfalfa, soy beans, and Lespedeza serecea.

During the winter of 1937-1938 we were thrilled to see our poultry eat out legume silage. When we entered the poultry house, the fowls were all in a commotion at the prospects of feeding time. The situation was very different from that when just mash was being fed. We came to realize that the zest of the appetite of poultry has something to do with the amount of food taken.

Puts Weight on Cockerels

During the last half of 1937, we divided some 60 young cockerels into two groups of which one received legume silage while the other did not. Both groups received a basic ration of grain mash. The cockerels which received legume silage put on 20 per cent more weight than those which did not receive legume silage.

The Item Publishing Company, Sellersville, Pa.
(Poultry Item, March, 1940)

Egg Yield Increased

During January and February of 1938, our experimental flock of poultry was divided into two groups, one group receiving legume silage while the other did not. Both groups received the same basic ration of grain mash. The hens which received the legume silage laid 50 to 60 per cent more eggs than that part of the flock which did not receive legume silage. The eggs were of fine taste and normal appearance.

Breast Blisters on Fryers

Wide roosts have been shown to be beneficial in reducing the incident of breast blisters of heavy fryers reared in wire bottomed brooders or houses. Some interesting data was recently collected at the Poultry Demonstration Plant at Pomona which is under the supervision of the Los Angeles County Live Stock Department. Varying sized jelly-like swellings over the keel bone of heavy fryers are quite common, especially after the 8th or 9th week. Since the males are heavier and the keels sharper than females', a higher percentage is usually affected. The blisters vary in length up to 3 to 4 inches.

Two groups of 150 heavy chicks, one Rhode Island Red and one Red-Rock cross were brooded and reared in outdoor wire bottomed electric brooders. Six brooders were used for each group.

At six weeks of age, 6-inch width roosts were placed lengthwise in two brooders, 2-inch width roosts were placed lengthwise in two more brooders and two brooders were left without roosts. Individual examination of all birds in all lots at the end of the 14th week showed the following percentages of fryers having breast blisters:

Rhode Island Reds

Lot 1—Wide roosts 6 inches	20.4 Per cent
Lot 2—Narrow roosts 2 inches	26.5 Per cent
Lot 3—No roosts	44.2 Per cent

Red-Rock Cross

Lot 1—Wide roosts 6 inches	35.5 Per cent
Lot 2—Narrow roosts 2 inches	22.2 Per cent
Lot 3—No roosts	48.8 Per cent

Observations from the field indicate that wide (8 in.) heavy shingles may be scattered at random over the wire floors for roosting and likewise reduce the percentage of breast blisters. Many poultrymen are removing heavy fryers from the wire to finish on regular floors after the eighth week.

—Ralph H. Scofield, Pacific Rural Press, Feb. 10, 1940.

Why Buy Good Chicks?

By Emil G. Glaser

Condensed from Rhode Island Red Journal

THE idea of buying chicks just so that the brooder house is full for the new chick growing season, is never wise, for nearly always such chicks are bought with the eye on the price instead of on the chicks. I don't believe very many people would accept cheap chicks at any price if they could see at least three weeks or more ahead and feel the disappointment before buying that they do then.

A Double Mistake

In this connection I recall a farm woman who decided that her brooder house ought to hold 400 chicks instead of 250. Someone had told her that he always started that many chicks in his brooder house. So she bought 400 chicks for what she usually paid for 250.

She made two mistakes. In the first place, she bought cheaper chicks. In the second place, she was overcrowding her brooder house from the start. She discovered the two mistakes she had made, but not until she had only a few more than 200 chicks to show at the end of six weeks. The year before she had raised 244 chicks from 253 chicks started, or some 40 odd chicks more than from her flock of 400.

Then there is the factor of discouragement, too. When a person sees chicks dying every day by fives and tens he gets discouraged. He feels he has been gypped, and he has been. I know I'd get as sick of it as I did when I was a mere boy and when I, too, figured that cheap chicks, and a large number of them at that, would be much more profitable than buying quality. I lost more than 40 per cent out of 300 chicks and the disheartening thing about the whole business was that the ones I did save weren't worth a penny at the bottom of a lake.

Cost Increases 50 Per Cent

The table tells a story teeming with facts:

500 chicks at 6 cents		$30.00
	Final Total Cost	**Final Cost per Chick**
10 per cent loss	$33.00	6.7 cents
20 per cent loss	36.00	7.6 cents
30 per cent loss	39.00	8.8 cents
40 per cent loss	42.00	10.2 cents
50 per cent loss	45.00	12.0 cents

Waverly Publishing Co., Waverly, Iowa
(Rhode Island Red Journal, January, 1940)

Now it goes without saying that 6-cent chicks are considered very cheap chicks and good chicks run about 9 to 12 cents. Chicks costing 6 cents may be all right, but if they are good they are being sold at a loss, and if they are poor chicks many things may go wrong with them. Even quality chicks can go wrong but this is nearly always traced to lack of proper management and care, and few people who pay a good price for chicks to get quality allow themselves to get careless in raising them.

It is, true of course that by taking a very small profit some breeder hatcheries can sell chicks for as low as $7.00 per 100 but it is also true that they will place a much more liberal guarantee on their $10.00 per 100 chicks than on the lower-priced ones.

High mortality in the cheaper chicks can easily bring the cost of those chicks up to what good ones would have cost in the first place, and the worst of it is you still have cheap chicks.

Cheap Chicks and Egg Yield

In order to get profitable egg production, pullets not only have to live through to laying maturity but through the first laying year. Strong chicks from sturdy breeding flocks can't be sold for cheap chick prices by either hatcheries or breeders. The value of such chicks, of course, shows up from the beginning in their ability to live, and later lay through the first and perhaps the most strenuous laying year of several or more they may see.

Expressed in more modern terms, what sort of hen-housed average has the breeding flock that is producing 1940 chicks? Hen-housed average means simply the average of the flock on the basis of the original number of birds put in. Or what has the breeding flock in the way of a dependable production background, if not a hen-housed average? There are several good production measures of value such as R. O. P. records, laying test records, and supervised records at home.

Growth and Breeding

Quality chicks grow fast because they are always well and therefore consume large amounts of feed. Such chicks will also stand up under forcing methods such as all-night lights.

There is usually the highest amount of good breeding behind quality chicks and you can't buy quality at bargain counter prices. Selective breeding along a number of lines costs money and if a breeder or breeder hatcheryman is to remain in business he must charge the sort of price for his chicks that will assure him a profit. You can well afford to pay a few cents more for the well-bred ones because, after all, the cost of the chick is but a small portion of growing a pullet.

Profitable pullet egg production begins when you buy your chicks. The same is true if you buy the chicks for the production of broilers, spring chickens, capons, or just for meat chickens.

Egg Size Inherited

Egg size is inherited. That is, if the hen that produced a given chick produces large sized eggs then the chick out of that hen, as a grown bird, should likewise produce large sized eggs. Of course, this factor of large egg size is not quite this simple, for egg size comes only after a breeding program has been carried on for years. Although egg size has nothing to do with chick size, standard 24-ounce eggs produce the commercially profitable flocks.

Chicks should weigh eight pounds or more per 100. Fullness in the fluff, alertness and instant activity when the box is opened, are indications of vigor. Such chicks nearly always can be depended upon to develop into large, robust broilers or spring chickens and the pullets into big, husky layers.

Hatching Egg Premiums

By T. C. Byerly

University of Maryland

Condensed from 1940 Maryland Poultry Yearbook

HOW much premium can the hatchery operator afford to pay for eggs from properly culled, pullorum tested flocks mated to good quality males?

Let us consider the hatcheryman's problem. He must get back his outlay in hatching egg premiums either through increased selling price of his chicks or through increased hatchability, or both. Let us make the reasonable assumption that, except in very unusual circumstances, the hatcheryman would not continue to accept eggs which hatch consistently less than 50 per cent, and that he could not profitably pay any premium for hatching eggs unless he was able to sell chicks for more than 5 cents each. We will use these as base figures for an egg price chart.

The values shown in Table 1 are based on information presented by Poffenberger and DeVault for Maryland hatcheries. The average hatchery turned out about 110,000 chicks per year and sold them at an average price of $8.81 per hundred. This yielded the average hatchery a profit of $1.84 per hundred chicks. The average costs, other than the amount paid for hatching eggs, was $2.53 per hundred chicks. The values given for hatching eggs would preserve this profit at the stated cost with selling prices of chicks and hatchabilities shown in Table 1.

Table 1. Price which may be paid for hatching eggs by hatcheries with average hatchery production costs at stated selling prices of chicks.

Selling Price Per Chick (cents)	Salable Chicks Per Hundred Eggs Bought					
	50	60	70	80	90	100
	Allowable price for hatching eggs—Cents per doz.					
15	64	77	89	102	115	128
14	58	69	81	92	104	115
13	52	62	72	82	93	103
12	46	55	64	73	82	91
11	40	47	55	63	71	79
10	34	40	47	54	60	67
9	28	33	39	44	50	55
8	22	26	30	34	39	43
7	16	19	22	25	28	31
6	10	11	13	15	17	19
5	4	4	5	6	6	7

Average hatchability for Maryland hatcheries is slightly over 70 per cent.

To use Table 1, locate the correct selling price of chicks for your hatchery and the nearest value for hatchability to that which you obtain. For example, the average Maryland chick sells for 9 cents, the average hatchability is 70 per cent and for these conditions the allowable price for hatching eggs is 39 cents per dozen if you have average operating costs and are content to obtain the average profit of $1.84 per hundred chicks. Subtract the current price of market eggs, or any other agreed price from 39 cents to determine the amount of premium you can afford to pay.

The initial premiums to be paid may be calculated by assuming a hatchability of 70 per cent. By deducting market price of eggs from the allowable prices corresponding to the price for which chicks are to be sold, the hatcheryman may determine the amount to be shared between the flock owner as premium and himself as added profit.

Maryland State Poultry Council, College Park, Md.

EGGS laid on Good Friday keep fresh all year and bring their owner luck, according to an English superstition.

—Carl H. Schroeder, Poultry Tribune, March, 1940.

VIEWS OF THE EDITORS

By-Products Research

Good news comes from Washington. Secretary of Agriculture Henry A. Wallace announced on February 6 that poultry products and by-products would be included in the studies to be conducted by the new Regional Laboratories for Research on Utilization of Farm Products. The poultry studies will be carried on in the laboratory being located near San Francisco, Calif.

Ever since the government, more than a year ago, announced that it would establish laboratories for the purpose of discovering new uses and wider markets for farm products, poultry organizations and various individuals have been making an effort to have eggs and poultry included among the products to be studied.

Science and invention do not stand still. From the University of California comes word that a synthetic egg white has been developed from soybeans, so what the government might be able to do in developing other uses for eggs through its research program may help to meet this new threat.

Whether or not you have had occasion previously to write to Secretary Wallace asking that he give consideration to the desires of the poultry industry, here is a good chance to show him that our industry appreciates the things that are done for it. A brief "thank you" letter will do, but get it off to him before it slips your mind.

—Everybodys Poultry Magazine, March, 1940.

"The Eyes Have It"

Many years ago an English cattle breeder made the statement, "The eye of the master fatteneth his cattle." As better records have made more accurate information available on agricultural practices, the truth of this statement has been given increased emphasis.

The latest information on this subject comes from Ohio State University. Rural economists there have compared the receipts from grain farming, cow-sow-hen farms, dairy, hogs, general livestock, and corn-hog farms in western Ohio for the period 1934-38. They say, "One argument in favor of selecting enterprises to suit preferences is that the study shows farmers usually obtained better results with their favorite projects than did neighbors who used these enterprises as sidelines. The livestock man got along better with sheep and beef cattle, the dairy farmer got higher production from his cows, and hens laid the most eggs on poultry farms."

The human element—the relation between the feeder and his animals or birds, as expressed in the statement, "The eye of the master fatteneth his cattle," is all important. Animals and birds, like human beings, respond to management methods that somehow, psychologically perhaps, express a deep feeling of interest and provide close attention to important details.

—O. A. Hanke, Poultry Tribune, March, 1940.

Price Flop

After the hectic price-history of February 1940, we're beginning to wonder who is nearest right on this price-making business.

Most level-headed people do not want government control of prices in any form, and they'll take their chances with the men in the business. Occasionally we're disappointed.

The boys in New York certainly figured wrong this winter. The picture looked dark enough in December, but they first yielded to the good old American custom of running to extremes, ran down wholesale prices too far and then forgot to reduce retail. The effect was disastrous.

They complained about "government buying" like spoiled kids and followed (in January) with appropriate action, refusing to admit the strength in the market. Old Man Weather stepped in and still they played ostrich until February. Then, too late for comfort, they shot prices up, and knocked 'em down, 5 cents at a clip.

If government buying freezes prices and business, poor private judgment in pricing and evaluating, is like an uncontrolled flood that destroys profits. The Trade has given Balance artists a wonderful argument this winter.

The experience of the past three months seems to prove that the boys on the receiving end are a little too concerned about the way the Consumer will accept high priced eggs, and a little too cold-blooded about the effect of very low prices on the Producer, the health of hens, egg quality and the general welfare. We still believe in the old law of Supply and Demand, except when market reports say: "Receipts light but prices down due to lower New York advices." If all means of news communication were cut, we might get a true Supply-Demand price, but not under modern conditions.

Just as they ignored weather conditions in January until they became a critical market factor in February, so now they are refusing to evaluate the long-term effects of six weeks of bitter weather on the hen population and they're "bearing the market." We believe hens have been hurt by cold weather (especially in South) and that we'll see stronger prices this summer than last.

—Poultry Item, March, 1940.

Egg Operations

If in an attempt to bring prosperity to an industry there has been an enormous cost placed on all the people, the net result accomplished will be both the ultimate impoverishment of the industry and a decrease in the buying power of the people.

In the egg industry there can be but little doubt that the government maintenance of price at enormous political and departmental costs has been inadvisable.

The destruction of the financial set-up which formerly accumulated and distributed market surpluses is about completed. The merchant, shipper, dealer and operator, whose average annual net profit was scarcely 1 per cent of his sales, is nearly ruined, his business experience discarded as useless and unworthy. In his place there has been foisted on the industry extravagant governmental departmental expenses, an enormous increase in public servants and a bill for running such operations far more costly than the scarcely 1 per cent the trade and its dealers used to make.

And to what end? The hills and valleys have not been taken out of the price structure; price fluctuations continue and because of efforts at price stabilization are broader and larger and consequently more disastrous.

Influences greater than the power of either governmental plannings or money still continue and will always continue to operate. One need only turn to the year 1939—last year—for proof. When has the industry faced such losses and such price fluctuations? And what occasioned them?

Pegging the spring price too high caused heavy accumulations, retarded consumption and influenced for large fall and early winter production. A bad and declining market extended from August until the cold, stormy weather came in December.

Proving pretty conclusively that price is the result of supply and demand, and that weather and sentiment are the outstanding unknown and uncontrollable factors.

About a year ago this correspondent suggested the advisability of refraining from accumulating merchandise in competition with a buyer using an unlimited supply of the other fellow's money. It seemingly wasn't bad advice, and if your Uncle Sam wants to gamble again it might be a good idea to let him have the field to himself.

The conventions will soon be upon us. When the grips are packed it might be well to leave out any form of contract which will necessitate the storing of eggs at a high pegged price.

Apparently government can accumulate debts and stay in business—it has never been considered a safe operation for a business man.

—Market Observer in American Egg & Poultry Review, Feb. 1940.

Preseason Turkeys

Last season, at this time, scores of brooder houses were filled with early turkeys. In some states, notably Utah, these birds were started by the thousand. It would seem rather evident that the growers did not make too much from these early birds, for not only are there few of them in evidence, but even at this date there is as yet no keen demand for turkey eggs.

Now comes reports from scattered sources that, with the growers planning their chief operations for the regular growing season, the hens themselves step into the picture and are starting to lay far earlier than normal. Whether these early eggs are coming in sufficient quantities is a matter of conjecture, but reports come in from several sections that the hens, unlighted, not pushed for production, are starting to lay far earlier than is generally the case.

There is no question but that the preseason birds last year had some effect on the market. With the heavy storage being carried this season, there seems little prospect for good prices early in the fall, so naturally the growers held back their orders for the regular season.

—Norbest Turkey News, Feb. 1940.

Eggs on the Canadian Army Fare

Canadian soldiers, citizens of the greatest egg-eating nation in the world, will get eggs twice a week while training in Canada under new ration regulations recently made public.

Failure to include eggs in the earlier regulations caused a flood of complaints to the Agricultural Department from egg producers. The rations used in the British Army were the basis on which the Canadian list was started at the beginning of the war. It caused considerable complaint because, since Canadians normally do not follow the same diet as people in the United Kingdom, the sudden change in the diet of thousands of men upset the processes of domestic marketing.

Latest reports of egg consumption show Canadians as the greatest egg-eating people in the world. The per capita consumption in Canada each year is 23.7 dozen, the United States, 16.6, and the United Kingdom, 14.2.

—American Egg and Poultry Review, February, 1940.

POULTRY STATISTICS

Hens on Farms — Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Preceding year Dec. 1	Jan. 1	Feb. 1	Preceding year Dec. 1	Jan. 1	Feb. 1	Preceding year Dec. 1	Jan. 1	Feb. 1
North Atl.									
1929-38 (Av.)	92.9	96.9	94.9	20.6	25.8	33.0	19.1	25.1	31.2
1939	96.3	98.4	96.5	27.5	32.8	38.0	26.6	32.3	36.4
1940	92.9	97.2	94.8	28.2	34.1	35.2	26.2	33.1	33.3
North Cent.									
1929-38 (Av.)	107.1	114.0	113.3	12.7	16.5	23.1	13.9	19.2	26.6
1939	102.4	110.4	110.2	17.8	23.2	30.0	18.9	26.1	33.5
1940	108.8	115.0	111.8	20.3	25.2	21.6	22.7	29.6	24.8
South Atl.									
1929-38 (Av.)	56.2	58.9	57.6	18.2	20.7	29.3	10.2	12.2	17.0
1939	56.0	59.9	57.7	23.3	25.9	32.7	13.1	15.5	19.1
1940	56.9	59.9	58.6	23.8	28.0	25.3	13.7	16.7	14.5
South Cent.									
1929-38 (Av.)	61.2	65.0	64.4	15.8	17.7	26.2	9.8	11.6	16.9
1939	60.6	63.6	63.4	19.2	22.3	30.2	11.9	14.4	19.1
1940	62.4	65.8	64.0	18.5	22.3	18.8	11.8	14.8	12.1
Western									
1929-38 (Av.)	70.8	73.2	72.7	18.8	23.2	30.2	12.8	16.4	21.3
1939	71.1	72.6	71.1	21.1	27.1	37.5	14.4	19.6	26.0
1940	70.4	73.7	71.3	24.2	30.2	32.1	16.1	21.8	21.6
United States									
1929-38 (Av.)	79.8	84.5	83.6	15.2	18.7	26.0	12.3	15.8	21.8
1939	78.0	82.8	82.0	19.9	24.6	31.9	15.9	20.4	26.0
1940	80.8	85.1	82.8	21.5	26.3	23.9	17.3	22.2	19.2

The February 1 returns from crop correspondents show a greater than usual seasonal decline in the number of layers during January, with egg production actually less on February 1 than on January 1, thus reversing the usual upward trend of production at this season of the year. Similar trends are shown by returns from large commercial egg producers.

Culling of flocks continued heavier than usual during January, the decrease in number of layers from January 1 to February 1 being almost 3 per cent. Last year the decrease during January was 1 per cent, which was about normal. As a result, the relatively small gain of 3 per cent in number of layers which remained at the end of 1939 from the fairly liberal hatchings of that year has now all but disappeared, the number on hand February 1 being less than 1 per cent above numbers on that date last year. This small residue of gain out of the apparent beginning of a substantial increase of layers, which was seen in the heavy increase shown by the operations of commercial hatcheries last spring, is the result mainly of

the increasingly unfavorable feed-egg price ratio during the past fall, which culminated in a December price relationship among the most unfavorable in the 30 years of record for that month. As usual, there remains on hand February 1 some pullets not yet of laying age to be added to the laying flock. The reported number of these on hand this year is equal to about 10 per cent of the present number of laying hens, this being a somewhat greater than usual proportion for that date. These pullets might afford the means of some relative increase during the next few months in the size of the laying flock compared with last year, if egg prices should prove favorable.

Compared with the 10-year (1929-38) average for February 1, the present number of layers is short only about 1 per cent for the United States as a whole. The East North Central and South Atlantic areas show increases of 1 or 2 per cent, while the West North Central, South Central, and Far West areas report decreases of 1 to 3 per cent. In the North Atlantic area the number is about equal to the 10-year average.

The number of eggs produced per 100 layers on February 1 shows a decrease of 9 per cent compared with January 1. Only in the North Atlantic and Far Western areas where the weather remained not so far from normal did production per hen fail to show a sharp decrease.

Normally the rate of production per hen increases rapidly during January, the 10-year average showing a gain of 39 per cent from January 1 to February 1. Never before in the 15-year record of this Department has the production rate declined during January, even in a single major geographic area.

The average February 1 production of eggs per 100 hens reported this year was the lowest since 1935, 8 per cent below the 10-year February 1 average, and 25 per cent below February 1 production last year.

—Comment from Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Terminal market receipts of eggs in January this year were 10 per cent lighter than in January 1939, and in February the percentage reduction under a year ago has been slightly greater. Four-market receipts during the first 3 weeks of February were approximately 100,000 cases lighter than in the corresponding period of last year, which along with storage stocks of less than 4,000 cases, is some indication of how acute the supply situation has been in these cities. Supplies in some of the rather important producing areas, particularly in parts of the South, were so light that eggs were actually shipped into these areas to relieve the local shortages. Pacific Coast eggs helped fill in this gap, as did also increasing quantities of such eggs at some of the major markets. Four-market receipts from the Pacific Coast in January were 82 per cent greater than a year earlier. The use of greater quantities of nearby production for local consumption, contributed in reducing terminal market arrivals from various areas which are usually important sources of supply.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs (cases) at 4 Markets*

Geographic sections	January 1940	January 1939	Per cent change
New England	54,825	41,604	+ 31.8
Middle Atlantic	174,133	165,153	+ 5.4
South Atlantic	13,588	19,022	– 28.6
East North Central	199,317	219,187	– 9.1
West North Central	334,384	448,546	– 25.5
South Central	508	4,683	– 89.2
Mountain	35,775	38,300	– 6.6
Pacific	66,028	36,174	+ 82.5
Miscellaneous	297	295	+ 0.7
TOTAL	878,855	972,964	– 9.7

Receipts of Dressed Poultry (pounds) at 4 Markets*

New England	1,261,146	684,063	+ 84.4
Middle Atlantic	2,103,120	921,267	+128.3
South Atlantic	2,823,688	3,651,156	– 22.7
East North Central	18,462,926	12,645,169	+ 46.0
West North Central	1,617,082	2,279,697	– 29.1
South Central	1,577,331	847,372	+ 86.1
Mountain	3,331,558	893,823	+272.7
Pacific	641,909	270,681	+137.1
Miscellaneous	0	0	–
TOTAL	31,818,760	22,193,228	+ 43.4

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
February 3	26	29,451	– 3.28	+ 1.36
February 10	28	28,344	– 0.52	+ 2.06
February 17	27	29,660	– 1.36	– 2.35
February 24	28	33,228	+15.74	+13.07

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs			Pounds of Poultry (000 omitted)			Pounds of Young Stock (000 omitted)			Pounds of Fowl (000 omitted)		
	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.
Feb. 3	34,336	70,193	–51.08	2,178	2,284	– 4.62	Discontinued until			1,793	1,897	–5.46
Feb. 10	33,349	77,849	–57.16	2,246	1,982	+13.35	quantities			1,830	1,682	+8.82
Feb. 17	46,970	89,733	–47.66	1,940	1,947	– 0.37	available			1,588	1,662	–4.44
Feb. 24	61,470	94,822	–35.17	1,501	1,614	– 6.96	are larger.			1,263	1,401	–9.87

Reports of egg receipts at Central Western packing plants during recent weeks apparently reflect the prevailing weather conditions. Except for the last week of that month, January receipts showed successive weekly decreases. Then there were sharp increases for a couple of weeks, amounting to a gain of almost 20 per cent during the week ended February 10. Probably the severe weather was responsible for a falling off the following week, when there was a 3 per cent decrease, and likewise the return to more open weather during the week ending February 24 partly explained the jump in arrivals to the largest quantity received during a single week since early September. Arrivals at these country packing plants still continue to be about 50 per cent under a year ago. The seasonal trend of receipts at Pacific Coast packing plants has been consistently upward for several months, and in relation to a year ago have shown an increase of about 10 per cent since February 1.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
February 3	60	64,473	60,007	+5.67	+ 7.44
February 10	60	67,572	59,369	+4.81	+13.82
February 17	60	70,822	60,601	+4.81	+16.87
February 24	60	70,739	59,102	–0.12	+19.69

Poultry Meat Prices

Farm Prices of Chicken per Pound

(Figures given in cents)

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	July 15	Sept. 15	Nov. 15	Dec. 15
Average 1929-38	14.8	15.0	15.3	15.9	15.7	15.1	15.2	14.1	13.6
1938	16.7	16.0	15.9	16.2	16.1	15.0	14.3	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.7	13.6	12.4	11.7
1940	12.0	12.2							

Egg Prices

1940 Egg Prices at New York City

Kind	Feb. 2	Feb. 9	Feb. 16	Feb. 23	Feb. 23 '39
Mixed Color Firsts	23	29	27½	24¼-24½	17½
Nearby and Midwestern White Premium Marks	25-26½	30½-32	31½-33	25-26½	21-22
Nearby and Midwestern White Specials	23¾-24½	30	31	24½	19½-20
Pacific Coast Specials	26-26½	30½-31	29½-30¼	26½-27½	27¼-27¾
Nearby and Western Brown Exchange Specials	24	29¼	30	24½-25	19½

Erratic price fluctuation brought about by changes in the immediate supply situation were noted in the February egg markets. In the monthly review of the markets, the Agricultural Marketing Service points out that during the first half of the month, severe weather conditions in many of the middle western and eastern producing sections caused egg production to drop, and that for a temporary period interfered seriously with shipments. Toward the middle of the month, as weather conditions in the mid-west sections moderated somewhat, markets reacted downward almost immediately from the relatively high price level. An upward climb began again, however, when cold weather and a blizzard in the eastern producing areas changed the picture with respect to fresh egg supplies. Markets are now almost solely dependent upon current production, for storage eggs are practically out of the picture at this time. This is one reason why February fresh egg prices responded so quickly to changes in the current supply situation. Another reason is the usual uncertainty as to market trends just before the beginning of a new season.

Prices of all grades of egg fluctuated widely during February in eastern markets. Firsts at New York opened at 22 cents, were up to 29 cents by February 9, and back to 24¼ cents by the 13th. Another series of advances took this grade up to 27½ cents in the three following days, then declines again occurred. Breaks of 4½ cents on two different days offer some indication of the extremely unsettled market. At the close of the month (February 28) Firsts at New York are 20 cents. Price changes on nearby eggs at New York were even more violent, with a range of 10 cents between the highest and lowest prices quoted during the month. Pacific Coast eggs at New York shared in the fluctuating market, but in the Pacific Coast markets proper there were relatively few changes. U. S. Extras at San Francisco advanced 1 cent during the month, closing at 19½ cents. Seattle and Los Angeles prices advanced slightly and later declined to the February 1 level.

Purchases of eggs by the Federal Surplus Commodities Corporation took place during February at New York, Chicago, Portland, Los Angeles, San Francisco, and Petaluma, California. Buying in eastern markets did not begin until February 24, but during the next 4 days, approximately 15,000 cases were bought on the New York and Chicago Mercantile Exchanges. Prices paid at New York were 20 cents for Firsts, 21 cents for Extras, and 22½ cents for White and Brown Specials. Chicago prices were 19 to 19¼ cents for Extra Firsts, and 18¾ to 19¼ cents for Firsts. Pacific Coast buying was done under the plan of sellers making offerings at a price.

Total February purchases to date approximate 15,000 cases. U. S. Extras were bought at 18½ to 19½ cents at San Francisco, with Portland prices ¼ to 1 cent below these, and Los Angeles prices ½ cent higher.

—Comment from Monthly Egg and Poultry Markets Review.

Farm Prices of Eggs per Dozen

(Figures given in cents)

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	July 15	Sept. 15	Nov. 15	Dec. 15
Average 1929-38	24.2	20.3	17.3	16.8	16.8	18.1	23.2	30.1	28.8
1938	21.6	16.4	16.2	15.9	17.6	19.9	24.9	29.0	27.9
1939	18.8	16.7	16.0	15.5	15.2	16.5	20.6	25.8	20.5
1940	18.3	20.2							

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1939	1938
February 1	7.9	8.4	8.4	.242	.196	.217	1.92	1.65	1.85
February 8	7.7	9.0	8.4	.250	.206	.217	1.92	1.65	1.85
February 15	7.0	7.8	8.9	.274	.211	.207	1.91	1.65	1.84
February 21	7.1	8.5	8.8	.268	.193	.208	1.91	1.64	1.83
February 29	8.8	9.0	9.1	.217	.185	.200	1.92	1.66	1.82

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-Yr. Avg. 1930-39	1940	1939	1940	1939
February 3	5.56	6.52	5.63	.221	.158	1.232	1.032
February 10	5.18	6.07	5.72	.240	.165	1.247	1.002
February 17	5.93	6.07	5.78	.212	.165	1.260	1.001
February 24	6.23	6.21	5.87	.202	.164	1.259	1.018

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1940	1939	1938	1937	1936	1935
January	9.34	6.34	6.95	7.73	6.46	6.60
Year		7.17	6.50	8.27	7.07	6.41

—Data compiled by Edwin C. Voorhies, University of California.

Eggs in Storage

Storage stocks of shell eggs have dwindled to relatively unimportant quantities. Only 57,000 cases were reported for February 1, and these stocks were further reduced during the first half of the month. A light into-storage

Storage Holdings of Eggs

Kind	Feb. 1 5-Year Avg. 1935-39	Feb. 1 1939	Jan. 1 1940	Feb. 1 1940	% Change Feb. '39-Feb. '40
		(Thousands)			
Shell Eggs (cases)	223	136	532	57	–58.0
Frozen Eggs (lbs.)	59,499	50,345	72,279	56,003	+11.2
Frozen Case Equivalent (cases)*	1,700	1,438	2,065	1,600	+11.2
Total (cases)	1,923	1,574	2,597	1,657	+ 5.2

* Frozen eggs are converted on the basis of 35 lbs. to the case.

movement began after that, but March 1 stocks expected to be less than those of February 1, more nearly approaching the March 1, 1935, figure of 34,000 cases. Last year's March 1 stock was 165,000 cases, and the 1935-39 average for the same date is 163,000 cases. 1939 was one of the few years when there was a net increase in egg stocks during February, although even so, March 1, 1939 stocks were considerably below the 1931 record high for that date, namely, 408,000 cases. Other years when March 1 stocks exceeded those of 1939, were 1932, 1937 and 1938.

The quantity of frozen eggs in storage on February 1 was 56 million pounds, compared with 50 million pounds a year earlier, and a 5-year average (1935-39) of 59½ million pounds. Since February 1, stocks in 35 cities reported weekly have been reduced about 25 per cent. This rate of reduction is much greater than usually occurs at this season, which may be attributed in part to the light supplies of shell eggs which have been available. Production of liquid eggs in breaking plants in January was 37 per cent lower this year than last.

—Comment from Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	Feb. 1 5-Year Avg. 1935-39	Feb. 1 1939	Jan. 1 1940	Feb. 1 1940	% Change Feb. '39-Feb. '40
		(Thousand Pounds)			
Broilers	14,319	10,804	11,169	10,203	– 5.5
Fryers	13,606	13,696	12,809	8,597	– 37.2
Roasters	30,144	31,273	31,117	27,119	– 13.2
Fowls	21,261	20,883	27,834	24,568	+ 17.6
Turkeys	28,236	28,264	52,307	65,329	+131.1
Ducks	3,251	4,664	5,852	4,250	– 8.8
Miscellaneous	19,795	23,947	19,211	17,425	– 27.2
Unclassified			7,344	9,694	
Total	130,612	133,531	167,643	167,185	+ 25.2

The striking feature of the February 1 report of frozen poultry stocks was the turkey figure. A new all-time high was established, with stocks of 65,329,000 pounds reported, compared with but 28¼ million pounds a year earlier. This February 1 figure represented a net increase during January of 13 million pounds, compared with a 5½ million pounds increase in January 1939. No information is yet available as to what changes in turkey stocks have occurred since February 1. Total storage stocks of all classes of frozen poultry on February 1 were 167 million pounds. This quantity has been reduced since that date by about 10 per cent. In terms of pounds, this is a February reduction about 50 per cent greater than usually occurs. But, as was the case on February 1, the March 1 report will show stocks not only substantially greater than a year earlier, but far above average, and probably a record for that date.

—Comment from Monthly Egg and Poultry Markets Review.

Poultry Canning Operations

Poultry Canning Operations During January, 1940

Commodity	Quantities reported to date for Jan. 1940	Quantities reported for Dec. 1939	Same Firm Comparison Jan. 1940	Same Firm Comparison Jan. 1939	Same Firm Comparison % change in 1940
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	4,538,998	3,545,593	4,538,998	2,834,553	+60
Number of firms reporting	18	19	18		

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of plants	Eggs Set During January 1940	Eggs Set During January 1939	Eggs Set During January % chg.	Salable Chicks Hatched During January 1940	Salable Chicks Hatched During January 1939	Salable Chicks Hatched During January % chg.	Chicks Booked Feb. 1 for Feb. or later delivery No. of plants	Chicks Booked 1940	Chicks Booked 1939	Chicks Booked % chg.
		Thousands			Thousands				Thousands		
N. Eng.	22	1,198	1,884	–36	855	1,680	–49	19	1,598	2,430	–34
Mid. Atl.	38	885	1,476	–40	304	487	–38	38	1,183	1,638	–28
S. Atl.	37	1,184	1,450	–18	763	776	– 2	31	1,155	1,376	–16
E. N. Cent.	98	1,217	1,942	–37	551	629	–12	106	2,142	2,861	–25
W. N. Cent.	59	971	1,782	–46	430	599	–28	94	1,322	2,023	–35
S. Cent.	47	967	1,602	–40	445	677	–34	42	589	1,112	–47
Mountain	20	302	562	–46	95	155	–39	21	756	997	–24
Pacific	38	2,202	3,309	–33	760	1,061	–28	36	4,437	6,741	–34
U. S.	359	8,926	14,007	–36	4,203	6,064	–31	387	13,182	19,178	–31

A considerable decrease is indicated in the production of baby chicks during January, 1940, as compared with the same period last year, the

Agricultural Marketing Service reports. Three hundred fifty-nine hatcheries, having a combined capacity of 43 million eggs, reported 8,926,000 eggs set and 4,203,000 chicks hatched in January as compared with 14,007,000 eggs set and 6,064,000 chicks hatched a year earlier. This is a decrease of 36 per cent in the number of eggs set and a 31 per cent decrease in the number of chicks hatched. Advanced orders of 387 plants on February 1 totaled 13,182,000 chicks as compared with 19,178,000 on the corresponding date last year. This also is a decrease of 31 per cent.

Some of the significance of these changes is lost when it is noted that the number of eggs set in January last year was 36 per cent larger than the number set a year earlier, and the number of chicks hatched was 58 per cent larger. A new peak in hatchery operations for January was established by these increases last year. A reduction this year, therefore, brings the current January chick output close to a normal level for January when measured by the average January output of recent years.

January is one of the months in which the number of chicks hatched commercially represents only a small proportion of the total number hatched during the entire season. Because of this, hatchery operations in January may sometimes show extreme percentage changes without any material effect upon the total season production. A more significant indication is advance orders. The decreases in eggs set, chicks hatched and advance orders compared with the same period last year are fairly uniform. Apparently the hatchery industry thus far is following a policy of caution by holding operations closely to orders on hand.

This policy is probably the result of the unfavorable egg price situation so clearly perceptible in December. Receipts of eggs at the terminal markets were unusually heavy in December, and even in the early part of January, and lower egg prices prior to the cold wave were reflected in an increasingly unfavorable feed-egg ratio. The cold wave snapped egg prices back up during the latter part of January and early part of February, putting the feed-egg ratio on a more favorable basis to the producer. But it is too early to judge what effect this improvement in feed-egg ratio will have on the future demand for chicks. Some indication for the season is the results of a survey made by the Agricultural Marketing Service on February 1, 1940 as to buying intentions of its crop correspondents with respect to purchase of baby chicks this season compared with the number bought last year. This survey showed that approximately 4 per cent less chicks would be bought during the 1940 season than were bought in 1939.

All sections of the country showed decreases in the number of eggs set, chicks hatched, and in the number of chicks booked for future delivery. The decreases were distributed fairly uniformly throughout the country. The principal exception is the South Atlantic States. In chicks hatched this section showed only a 2 per cent decrease as compared with the same period a year ago. This is considerably less than the 31 per cent decrease for the country as a whole. In eggs set and number of chicks booked, the decreases in that section were only half as much as the decreases shown for the whole country.

—Comment from Hatchery Report.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		January 1940	January 1939
Eggs in shell	(doz.)	283,705	190,888
Eggs and Yolks, frozen, dried, or canned	(lbs.)	7,554	Not available
Live Poultry	(lbs.)	7,917	7,883
Dressed Poultry	(lbs.)	127,386	124,219

Imports of Eggs and Poultry

Commodity		January 1940	January 1939
Eggs in shell	(doz.)	16,371	49,623
Whole Eggs, dried	(lbs.)	5,000	6,000
Whole Eggs, frozen	(lbs.)	167	0
Yolks, dried	(lbs.)	52,800	28,775
Yolks, frozen	(lbs.)	0	0
Egg Albumen, dried	(lbs.)	37,600	72,792
Egg Albumen, frozen	(lbs.)	0	0
Live Poultry	(lbs.)	37,336	73,912
Dressed Poultry	(lbs.)	12,254	14,761
Poultry, prepaid	(lbs.)	58,275	117,421

Egg Breaking Operations

Egg Breaking Operations During January, 1940

Commodity		Quantities reported to date for Jan. 1940	Same firm comparison Jan. 1940	Jan. 1939	% change in 1940
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		226,937	218,722	347,964	–37
Mixed eggs (plain)		134,370	134,370	221,806	–39
Mixed eggs (emulsions, also with sugar, salt, etc.)		33,060	33,060	54,100	–39
Egg whites (all descriptions)		235,662	235,322	385,703	–39
Egg yolks packed	Without salt, sugar, etc.	163,822	163,580	314,653	–48
	With sugar	78,451	78,451	49,680	+58
	With salt	0	0	0	0
	All yolk emulsions, including glycerine	0	0	0	0
Total—pounds		872,302	863,505	1,373,906	–37
Total—case egg equivalent		24,923	24,672	39,254	
Number of firms reporting		32	30		

RESULTS OF LAYING TESTS

E. B. Parmenter's Rhode Island Reds at Rhode Island topped all other pens during January with a total of 385.90 points. H. J. Hardin's Reds at Georgia continue to sail along in front of all other contestants to date. At the beginning of the fifth month of the present trial run, this top-notch pen had 106 more points to its credit than the leader a year ago had. Highest hen to date belongs to Parmenter, is in the Rhode Island Test and has earned 131.65 points from 121 eggs in the 123 days thus far.

Less than a point now separates J. A. Hanson's two pace-setting pens in the White Leghorn division. These entries at Storrs are drawing further away from the rest of the pens in this breed.

W. C. Mullins' birds at Texas are holding their own in the Rhode Island Red section, but are still some 27 points behind Hardin's leading outfit. Parmenter's pen at Rhode Island is advancing rapidly in this group.

Eben Wood's New Hampshires at Storrs gained an even stronger hold on their number one position during January. George A. Pearce's pen at Passaic now rates second place in this breed.

Blue ribbon pen in Barred Rocks continues to be Norman W. Amidon's entry at Pennsylvania. R. C. Cobb's birds at Storrs remain in second position. Townsley Trapnest Farm's team at Georgia also has built up a sizeable lead in the White Rock breed.

Twenty Highest Pens in All Breeds to February 1

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1390	1446.50	Georgia
W. C. Mullins	Rhode Island Red	1348	1419.60	Texas
J. A. Hanson	White Leghorn	1403	1413.40	Storrs
J. A. Hanson	White Leghorn	1380	1412.80	Storrs
E. B. Parmenter	Rhode Island Red	1292	1394.10	Rhode Island
Alampi Poultry Breed. Farm	Rhode Island Red	1400	1386.85	Passaic, N. J.
H. J. Hardin	Rhode Island Red	1332	1385.95	Georgia
Eben Wood	New Hampshire	1282	1380.15	Storrs
R. E. & F. H. Kendrick	Rhode Island Red	1286	1367.70	Rhode Island
J. J. Warren	Rhode Island Red	1333	1365.85	Storrs
E. B. Parmenter	Rhode Island Red	1298	1348.30	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	1273	1343.35	Passaic, N. J.
Alfred Macmillan	White Leghorn	1270	1341.45	Texas
Thomas Mettler	Rhode Island Red	1312	1341.05	Passaic, N. J.
W. E. Pyles and Son	White Leghorn	1289	1336.85	Georgia
W. E. Pyles and Son	White Leghorn	1257	1322.10	Georgia
W. C. Mullins	Rhode Island Red	1283	1320.70	Texas
W. H. Wilson	Rhode Island Red	1384	1320.15	Georgia
George M. Heberer	White Leghorn	1298	1313.30	Texas
George M. Heberer	White Leghorn	1271	1311.95	Texas

High Pen in Each Standard Test to February 1

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1390	1446.50	Georgia
W. C. Mullins	Rhode Island Red	1348	1419.60	Texas
J. A. Hanson	White Leghorn	1403	1413.40	Storrs
E. B. Parmenter	Rhode Island Red	1292	1394.10	Rhode Island
Alampi Poultry Breed. Farm	Rhode Island Red	1400	1386.85	Passaic, N. J.
Thomas Mettler	Rhode Island Red	1312	1341.05	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	1222	1302.85	New York State
E. B. Parmenter	Rhode Island Red	1262	1298.25	Western New York
Norman W. Amidon	Barred Rock	1292	1294.00	Pennsylvania
E. B. Parmenter	Rhode Island Red	1217	1267.60	Florida
Nelson's Leghorn Breed. Farm	White Leghorn	1235	1241.95	Oklahoma
E. B. Parmenter	Rhode Island Red	1160	1209.15	Maine
J. J. Warren	Rhode Island Red	1150	1185.60	Michigan
Foreman Poultry Farm	White Leghorn	1114	1145.20	Central New York
Mishler-Liggett	Rhode Island Red	1106	1090.85	Arizona
Missouri Valley Hatchery	Rhode Island Red	1024	1082.55	Missouri

High Hen in Each Standard Test to February 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	121	131.65	Rhode Island
E. B. Parmenter	Rhode Island Red	118	129.50	Storrs
W. H. Wilson	Rhode Island Red	120	129.10	Georgia
E. B. Parmenter	Rhode Island Red	117	128.60	Passaic, N. J.
Thomas Mettler	Rhode Island Red	117	126.00	Hunterdon, N. J.
W. C. Mullins	Rhode Island Red	117	125.15	Texas
Piho Brothers	White Leghorn	114	121.85	Pennsylvania
E. B. Parmenter	Rhode Island Red	112	120.95	New York State
J. J. Warren	Rhode Island Red	111	120.95	Maine
E. B. Parmenter	Rhode Island Red	111	120.85	Florida
Louis H. Ritzhaupt	Rhode Island Red	108	118.45	Oklahoma
E. B. Parmenter	Rhode Island Red	115	117.90	Western New York
J. J. Warren	Rhode Island Red	109	116.05	Michigan
Henrich Poultry Farm	White Leghorn	110	115.95	Missouri
Del Rio Farm	New Hampshire	103	111.75	Arizona
Foreman Poultry Farm	White Leghorn	104	110.00	Central New York

High Pen in Each Breed to February 1 — (123 Days)

Owner	Breed	Eggs	Points	Test
H. J. Hardin	Rhode Island Red	1390	1446.50	Georgia
J. A. Hanson	White Leghorn	1403	1413.40	Storrs
Eben Wood	New Hampshire	1282	1380.15	Storrs
Norman W. Amidon	Barred Rock	1292	1294.00	Pennsylvania
Townsley Trapnest Farm	White Rock	1227	1232.85	Georgia
Harvey E. Taylor	White Wyandotte	1163	1125.75	Texas
Laclede Hatchery	Black Australorp	1094	1064.10	Oklahoma
R. S. Thomas	Ancona	1080	1014.45	Pennsylvania
Lindstrom Poultry Farm	Buff Minorca	937	866.75	Texas
E. J. Covey	Black Minorca	841	851.15	Texas
T. D. Brown	White Minorca	776	802.00	Texas
Famous Poultry Farm	Leghorn Cross	814	788.50	Georgia
Raymond Murphy	White Giant	665	687.95	Missouri
Harry Phillips	Columbian Rock	608	640.60	Missouri
Iowa Master Breeders	Buff Orpington	579	594.00	Missouri
S. E. Raymond	Lamona	498	507.05	Storrs
C. A. Richardson	Buff Leghorn	537	499.25	New York State
Cedarlaid Poultry Farm	Brown Leghorn	527	429.90	Florida
R. L. Jones	Light Brahma	238	252.60	Hunterdon, N. J.
Daniel S. Riker	Buff Rock	146	123.35	Maine
Walter Dobe	Barnevelder	95	98.60	Western New York

High Hen in Each Breed to February 1 — (123 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	121	131.65	Rhode Island
J. A. Hanson	White Leghorn	121	125.25	Storrs
George A. Pearce	New Hampshire	119	123.90	Passaic, N. J.
Norman W. Amidon	Barred Rock	110	118.65	Pennsylvania
John Spangenberg	White Rock	111	118.60	Maine
T. D. Brown	White Minorca	108	117.00	Texas
Harvey E. Taylor	White Wyandotte	108	115.35	Texas
Laclede Hatchery	Black Australorp	102	101.70	Oklahoma
Famous Poultry Farm	Leghorn Cross	102	100.60	Georgia
Raymond S. Thomas	Ancona	98	98.30	Passaic, N. J.
E. J. Covey	Black Minorca	98	97.05	Texas
Highland Poultry Farm	White Giant	88	93.85	Rhode Island
Iowa Master Breeders	Buff Orpington	84	86.65	Missouri
Lindstrom Poultry Farm	Buff Minorca	84	84.15	Texas
Harry Phillips	Columbian Rock	76	80.80	Missouri
S. E. Raymond	Lamona	73	79.80	Storrs
R. L. Jones	Light Brahma	70	73.60	Hunterdon, N. J.
Charles C. Ward	Buff Leghorn	77	72.85	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	75	61.40	Florida
Daniel S. Riker	Buff Rock	55	45.50	Maine
Walter Dobe	Barnevelder	24	26.25	Western New York

High Pen in Each Standard Test for January

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	353	385.90	Rhode Island
To-Lani Farm	Rhode Island Red	371	384.95	Georgia
J. A. Hanson	White Leghorn	351	376.00	Storrs
Norman W. Amidon	Barred Rock	353	367.45	Pennsylvania
Thomas Mettler	Rhode Island Red	347	367.10	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	335	363.80	New York State
W. C. Mullins	Rhode Island Red	324	345.40	Texas
E. B. Parmenter	Rhode Island Red	324	343.90	Western New York
J. J. Warren	Rhode Island Red	330	339.30	Maine
Missouri Valley Hatchery	White Leghorn	337	339.10	Florida
J. W. Schaible	Barred Rock	315	327.15	Hunterdon, N. J.
To-Lani Farm	Rhode Island Red	314	326.80	Oklahoma
W. C. Eckard	White Leghorn	300	323.40	Michigan
Ford's Riverbank Farm	Rhode Island Red	288	315.50	Missouri
W. A. Seidel	White Leghorn	287	311.25	Arizona
Nesbit Poultry Farm	White Leghorn	250	265.20	Central New York

High Hen in Each Standard Test for January

Owner	Breed	Eggs	Points	Test
A. J. Williams	New Hampshire	31	34.10	Florida
Erath Egg Farm	White Leghorn	31	34.10	Texas
Charles Lathrop	Barred Rock	31	34.10	Passaic, N. J.
Wegatepa Farms	Rhode Island Red	31	34.10	Maine
E. B. Parmenter	Rhode Island Red	31	34.00	Rhode Island
To-Lani Farm	Rhode Island Red	31	34.00	Georgia
J. A. Hanson	White Leghorn	31	33.50	Storrs
R. L. Jones	Light Brahma	30	33.00	Hunterdon, N. J.
Ford's Riverbank Farm	Rhode Island Red	30	33.00	Missouri
Riley Poultry Farm	Barred Rock	30	33.00	Central New York
Booth Farms and Hatchery	Barred Rock	30	32.60	Oklahoma
Foreman Poultry Farm	Rhode Island Red	31	32.45	Michigan
E. B. Parmenter	Rhode Island Red	31	32.15	New York State
Crook's Farm	Rhode Island Red	29	31.85	Pennsylvania
Clifton C. Hersey	Rhode Island Red	29	31.85	Western New York
Nelson's Leghorn Breed. Farm	White Leghorn	29	31.80	Arizona

20 Highest White Leghorn Pens in Country to February 1

Owner	Eggs	Points	Test
J. A. Hanson	1403	1413.40	Storrs
J. A. Hanson	1380	1412.80	Storrs
Alfred Macmillan	1270	1341.45	Texas
W. E. Pyles and Son	1289	1336.85	Georgia
W. E. Pyles and Son	1257	1322.10	Georgia
George M. Heberer	1298	1313.30	Texas
George M. Heberer	1271	1311.95	Texas
W. A. Seidel	1306	1307.85	Texas
Kauder's Pedigreed Leghorns	1280	1298.80	Georgia
Wm. L. Gilbert Home	1247	1296.55	Storrs
Kauder's Pedigreed Leghorns	1251	1292.40	Georgia
C. B. Davidsen	1258	1288.45	Georgia
A. E. Guinn	1320	1281.15	Georgia
Horseshoe Poultry Ranch	1299	1270.35	Texas
Guy A. Leader	1252	1265.30	Storrs
C. B. Davidsen	1208	1257.35	Georgia
C. O. Davis	1207	1256.55	Texas
Erath Egg Farm	1213	1256.15	Texas
Erath Egg Farm	1248	1253.35	Texas
Sand Springs Home Farm	1289	1250.20	Texas

20 Highest Rhode Island Red Pens in Country to February 1

Owner	Eggs	Points	Test
H. J. Hardin	1390	1446.50	Georgia
W. C. Mullins	1348	1419.60	Texas
E. B. Parmenter	1292	1394.10	Rhode Island
Alampi Poultry Breeding Farm	1400	1386.85	Passaic, N. J.
H. J. Hardin	1332	1385.95	Georgia
R. E. & F. H. Kendrick	1286	1367.70	Rhode Island
J. J. Warren	1333	1365.85	Storrs
E. B. Parmenter	1298	1348.30	Storrs
Alampi Poultry Breeding Farm	1273	1343.35	Passaic, N. J.
Thomas Mettler	1312	1341.05	Hunterdon, N. J.
W. C. Mullins	1283	1320.70	Texas
W. H. Wilson	1384	1320.15	Georgia
Ralph W. Anderson	1289	1307.35	Storrs
To-Lani Farm	1355	1302.90	Georgia
E. B. Parmenter	1222	1302.85	New York State
E. B. Parmenter	1262	1298.25	Western New York
Booth Farms and Hatchery	1265	1290.70	Georgia
J. J. Warren	1259	1283.55	Storrs
Thomas Mettler	1240	1269.90	Passaic, N. J.
George A. Pearce	1316	1268.20	Passaic, N. J.

20 Highest New Hampshire Pens in Country to February 1

Owner	Eggs	Points	Test
Eben Wood	1282	1380.15	Storrs
George A. Pearce	1303	1295.45	Passaic, N. J.
Pine Mt. Valley Farms	1221	1226.30	Georgia
Thomas J. Harrold	1235	1209.15	Georgia
Thomas Mettler	1221	1207.20	Pennsylvania
Pine Mt. Valley Farms	1229	1205.55	Georgia
Hubbard Farms	1233	1201.10	Pennsylvania
Ned C. Willoughby	1234	1196.50	Georgia
Pine Top Poultry Farm	1209	1189.55	Georgia
Fuzzydele Farms	1127	1188.20	Pennsylvania
Pine Top Poultry Farm	1109	1188.10	Storrs
Kauder's Pedigreed Hampshires	1118	1182.05	Georgia
George A. Pearce	1141	1170.05	Hunterdon, N. J.
Pine Top Poultry Farm	1139	1164.25	Michigan
A. J. Williams	1096	1151.30	Florida
Eben Wood	1094	1149.00	Passaic, N. J.
Lamar W. Sexton	1125	1137.30	Hunterdon, N. J.
Floyd H. Moore	1121	1110.00	Pennsylvania
Joachim Breeding Farm	1076	1100.60	Pennsylvania
Little's Poultry Farm	1117	1098.55	Florida

20 Highest Barred Plymouth Rock Pens in Country to February 1

Owner	Eggs	Points	Test
Norman W. Amidon	1292	1294.00	Pennsylvania
R. C. Cobb	1212	1216.85	Storrs
J. W. Schaible	1198	1158.25	Hunterdon, N. J.
E. B. Parmenter	1113	1149.15	Georgia
Dryden Poultry Breeding Farm	1190	1123.55	Storrs
Fuzzydele Farms	1132	1102.05	Storrs
P. N. Hibbard	1149	1098.80	Storrs
R. R. Parks	1089	1078.90	Maine
Woody's Hatchery & Poultry Farm	1134	1077.75	Georgia
Dryden Poultry Breeding Farm	1133	1071.10	Pennsylvania
Riley Poultry Farm	1064	1067.15	Oklahoma
Riley Poultry Farm	1114	1066.70	Texas
Broad Acres Farm	1113	1062.80	Storrs
R. R. Parks	1092	1052.20	Pennsylvania
R. C. E. Wallace	1003	1033.80	Georgia
Riley Poultry Farm	1050	1029.00	Georgia
Penn's Poultry Farm	1040	1021.55	Texas
Stuart W. Smith	1029	1010.15	Storrs
R. R. Parks	998	998.90	Florida
R. H. Sturgeon	996	996.90	Georgia

20 Highest White Plymouth Rock Pens in Country to February 1

Owner	Eggs	Points	Test
Townsley Trapnest Farm	1227	1232.85	Georgia
E. A. Hirt	1155	1175.80	Storrs
John Spangenberg	1179	1173.45	Storrs
John Spangenberg	1157	1161.80	Maine
Drumm Egg Farm	1128	1128.90	Georgia
Kalerok Farm	1065	1101.95	Maine
Homestead Farm	1220	1088.65	Pennsylvania
Booth Farms and Hatchery	1114	1083.15	Texas
E. A. Hirt	1034	1068.80	Rhode Island
Riley Poultry Farm	1070	1066.80	Oklahoma
Kalerok Farm	1036	1065.85	Pennsylvania
Riley Poultry Farm	1128	1030.70	Georgia
Booth Farms and Hatchery	975	1009.50	Missouri
Riley Poultry Farm	1073	1006.40	Storrs
Four Winds Farm	1038	996.85	Michigan
Albert C. Lawton	1008	995.50	Storrs
A. H. Ward	1014	984.10	Oklahoma
Booth Farms and Hatchery	984	982.40	Oklahoma
Belcarihill Farms	1025	968.85	Pennsylvania
Kalerok Farm	909	959.50	Rhode Island

Average Production in Each Test to February 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. In Ounces	Per Cent Mortality for Jan.	Per Cent Mortality to Feb. 1
Georgia	1,352	80.82	79.46	23.59	2.95	7.10
Texas	1,456	76.67	76.11	23.80	2.26	5.76
Pennsylvania	1,079	75.79	74.49	23.56	1.39	3.89
Storrs	1,300	75.37	74.46	23.71	.46	3.30
Passaic, N. J.	1,144	70.37	70.45	24.02	1.04	3.49
Oklahoma	650	70.77	70.40	23.85	1.84	5.23
Florida	1,248	66.16	65.40	23.71	2.40	5.28
Hunterdon, N. J.	650	65.74	64.76	23.92	1.38	4.30
Michigan	741	63.47	62.92	23.78	1.48	4.72
Arizona	390	62.38	60.45	23.23	2.30	6.41
Rhode Island	650	57.73	59.27	24.62	2.49	8.00
Maine	1,027	60.65	59.12	23.40	2.04	5.35
New York State	1,092	54.92	54.61	23.85	1.46	3.84
Missouri	780	50.77	52.65	24.86	2.43	5.51
Western New York	884	47.04	46.41	23.66	1.35	3.39
Central New York	910	46.61	45.94	23.64	.32	2.19
All Tests	15,353	65.60	65.07	23.80	1.71	4.78

High Pen, Each Breed, in Illinois Non-Standard Test to February 1

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	696	648.75
Walter Swanson	White Leghorn	618	641.70
John M. Pfeiffer	New Hampshire	518	562.10
F. S. Tarbill	Rhode Island Red	551	541.90
Berry Ajax Hatchery	Black Australorp	537	528.70
Belldear Hatchery	White Wyandotte	526	522.30
Illinois Hatchery	White Rock	520	514.55
Wallace Moody	Buff Rock	369	359.70

5 High Pens, R. O. P. Progeny Test, Paterson, N. J., to February 1

Owner	Breed	Eggs	Points
Crooks Farm	Rhode Island Red	1469	1477
E. B. Parmenter	Rhode Island Red	1467	1455
W. B. Coles	White Leghorn	1292	1246
J. J. Warren	Rhode Island Red	1243	1230
E. R. Rutter	White Rock	1247	1211

High Pen, Each Breed, in Vineland, N. J. Hen Test to February 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	637	695	Two-Year
E. B. Parmenter	Rhode Island Red	571	622	Two-Year
Hockhockson Farm	Barred Rock	525	562	Two-Year
Albert Lawton	White Rock	372	403	Two-Year
Pine Top Poultry Farm	New Hampshire	252	274	Two-Year
Sebold Poultry Farm	White Leghorn	340	364	Three-Year
G. E. Coleman	Rhode Island Red	229	244	Three-Year
Nedlar Farm	New Hampshire	224	243	Three-Year
Kerr Chickeries	Rhode Island Red	442	480	Mixed-Age
Quimby School	White Rock	393	424	Mixed-Age
Shamrock Poultry Farm	White Leghorn	384	415	Mixed-Age
Schwegler's Hatchery	White Wyandotte	347	374	Mixed-Age
Eben Wood	Barred Rock	328	357	Mixed-Age
Wene Chick Farm	New Hampshire	292	316	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	4489	4849	Two-Year
J. J. Warren	Rhode Island Red	4316	4630	Two-Year
Schwegler's Hatchery	Barred Rock	3654	3809	Two-Year
Albert Lawton	White Rock	3365	3562	Two-Year
Pine Top Poultry Farm	New Hampshire	3022	3261	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6300	6754	Three-Year
J. J. Warren	Rhode Island Red	6115	6585	Three-Year
Nedlar Farm	New Hampshire	4879	5251	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to February

Owner	Breed	Eggs	Points	Class
E. B. Parmenter	Barred Rock	669	733.75	Two-Year
J. A. Hanson	White Leghorn	628	688.85	Two-Year
J. J. Warren	Rhode Island Red	589	642.65	Two-Year
Fuzzydele Farms	New Hampshire	567	623.10	Two-Year
Lindstrom Poultry Farm	White Wyandotte	443	485.05	Two-Year
Fuzzydele Farms	White Leghorn	625	686.75	Mixed-Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Lindstrom Poultry Farm	White Leghorn	4119	4401.85	Two-Year
E. B. Parmenter	Rhode Island Red	4103	4374.55	Two-Year
E. B. Parmenter	Barred Rock	3980	4256.90	Two-Year
Fuzzydele Farms	New Hampshire	3822	4101.35	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3533	3766.70	Two-Year

Turkey Saddles

Turkey saddles, turkey blankets, call them what you may, these canvas coverings to put on the hens at breeding time are a boon to both the hens themselves and the grower who later sells the hens for market. Most of us who have been in the turkey business any length of time well remember the high mortality, the numbers of crippled hens we had each year at breeding time. Or even if the hens were not crippled, we always had a number with scratched backs that took all summer to heal.

Most of these evils have been overcome through the simple expedient of putting canvas saddles on the hens. Some of these saddles are home-made, more are purchased from one of the several companies making them. Saddles range in price between 10 and 20 cents, more of the better ones selling at close to the latter figure. But they can be used several years, if properly taken care of during the off season.

Not only do the saddles protect the hens while they are being "treaded," but they also give some protection from cold spring rains and snows. As a means of identification for various individuals, some growers paint or stamp numbers or symbols on the saddles, which does away with the use of leg bands.

There are, as with everything else, some objections. With some, indeed with practically all types of saddles, the hens are liable to get their head in the loop that goes around the wing, and a few of them will strangle. The percentage is not high, but it does happen.

An additional advantage of the saddles is that with heavy awkward toms the pleats or ropes on the saddles give some assistance to the act of mating. If the saddle is large enough, it will almost completely eliminate "bluebacks" once so prevalent among the breeder hens, as the other hens have no chance to do much damage by feather picking the back. This condition, of course, arises only in the commercial flocks, not in ordinary farm turkeys where the numbers are few and the range more or less unlimited.

—Norbest Turkey News, Feb. 1940.

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NATIONAL
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Eggs As a Beauty Aid ....*Rhode Island Red Journal* 195
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INTENTIONAL SECOND EXPOSURE

What progress is the DIGEST making? Well, we haven't had a general circulation mailing for six months, but there has been a steady trickle of new subscription orders along with an unusually high percentage of renewal orders, so our list of subscribers has continued to remain above 2,000 right along. We appreciate the fact that so many of you have taken the time to tell others about the DIGEST.

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Estimates of egg consumption vary, but we are inclined to accept the figures released by the U. S. Department of Agriculture about a year ago. The 10-year average was given as 40.7 pounds per capita. Figuring eight eggs to the pound, it would mean that the average American consumes about 325 eggs a year.

NATIONAL
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Vol. 2, No. 16 April, 1940

"Chicken in the Basket, 39c"

By L. H. Sweetser

Condensed from California Cultivator

DRIVING down Lankershim Boulevard in North Hollywood, I saw painted along the whole side of a building, "Chicken in a basket, with shoestring potatoes, honey and biscuits, 39 cents."

I'll try anything once, when real hungry, so I stepped in with some curiosity. I ordered. A small basket was brought in, filled with shoestring potatoes smothering a half of about a two-pound fried spring chicken; and the trimmings. There was no knife or fork, but a little bucket of warm water to douse my hands. I ate everything but the bones, the basket and the bucket.

I said to Bernard Lohmuller, the proprietor, "That wasn't bad. Do you have many customers?"

He said, "I put in an emergency order for 280 pounds extra fryers last Sunday. We turned away about 200 customers because of lack of accommodations. We opened a few weeks ago and are now arranging to enlarge our quarters. I'd say we had plenty customers. People will come if you give them the best. They are attracted by popular prices and if you give them quality, they come back."

"Where do you get your chickens?" I asked. "And how about quality?"

Cultivator Publishing Co., Inc., 317 Central Ave., Los Angeles, Calif.
(California Cultivator, Mar. 23, 1940)

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"Where do you get your chickens?" I asked. "And how about quality?"

Cultivator Publishing Co., Inc., 317 Central Ave., Los Angeles, Calif.
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INTENTIONAL SECOND EXPOSURE

"We get our fryers from an established dressing plant which deals directly with the farm grower. Our birds must be prime. We use colored chickens raised on wire netting. The colored birds are meatier than Leghorns and have small bones. Those raised on wire are not gristly with muscle from running at large. They are tender and of excellent flavor."

"Could you deal directly with the grower?"

"If they had a proper dressing plant and the birds were competently dressed, chilled and delivered as we demanded. It is not feasible for the ordinary farm grower to deal directly with the restaurant. We insist that our fowls be served our customers the day after they are killed. So we can't use refrigerated chickens."

"We must have birds that were properly fed, too. Too much cheap fish meal in the fattening ration makes the customer think he's eating chicken fried in fish grease. Sometimes he jaws the cashier about it. As a rule, he does not come back."

"How did you get a good trade, opening here unknown, and without a following?"

"What brought you in here," he countered, "the sign?" I said yes.

Sign Attracts Patrons

"Well, the sign brings most of them. They are curious about the slogan, 'Chicken in a basket,' which I have had copyrighted. And they are curious about the popular price. Catchy slogans of houses such as these, like 'Chicken in the rough' and 'Chicken in a nest,' attract attention and bring customers. At night, the flood of bright lights here hits motorists in the eye; the colored neon sign with the big chicken is seen for a block. Sundays, they see a line waiting to get in for seats. So they venture in to try us out. We know how to treat them right when inside, and they come back."

"What would you say about the farm grower? Is there not too much competition for him to make money?"

Prime Birds in Demand

"There is little competition in prime stuff. I believe any grower who fattens and offers the type of fryers I handle, and the other restaurants, drive-ins and cafes which cater to particular customers, will have an immediate market at top quotations.

"There are hundreds of such outlets. Not the little joint, run by maybe man and wife and catering to a handful of careless customers. But the real chefs who are proud of their output. There are many. It used to be that chicken was handled mostly in the big restaurants; a few of them used up to 3,000 fryers and roasters a week. Now, the smaller restaurants, like this one, use a surprising number of fowls for their size.

"There is always a market for the best. The market searches out the quality product. This is especially so during times of financial stress. The market for poor poultry products now is wrecked. Only the prime stuff is in active demand.

"Another thing; tasty chicken, reasonable in price, makes more customers for prime chickens. Fresh eggs, quality eggs, look better on the plate, taste better, and make more customers for good eggs. To the farm grower I would say, 'Raise quality poultry products, top the market, and increase consumption'."

Eggs As a Beauty Aid

More and more eggs are coming into use as a beauty aid says Antoinnette Donnelly of the Chicago Tribune. This beauty expert says that nature put inside an egg-shell the ideal ingredients for a skin-beautifying facial. "The golden yolk is rich in neutral oil which, while wonderfully nourishing to the skin, is neither akaline nor acid," she says. "And the white," she continues, "is a mild and perfect astringent."

The following is an egg facial which she recommends and which our women readers may wish to try: Remove makeup with cleansing cream. Steam face with hot towels. Separate egg. Beat yolk just a little and massage the face with it, rubbing it on gently with an outward semi-circular movement. Remove yolk with damp cloth dipped in fresh cold water. Dry skin thoroughly. Apply white of egg and leave on for 10 minutes until it is solid. You'll feel a vigorous, healthful tingling and tightening up. Remove first with cold water, then with warm water.

—Rhode Island Red Journal, April, 1940.

MEMBERS of a Moose Lodge braved sub-freezing weather the Saturday before Easter to plant 3,600 Easter eggs on the Pennsylvania Capitol grounds at Harrisburg for a children's egg-hunt.

Half an hour before the scheduled signal was to be given, 3.000 children broke through the lines of spectators and began eating eggs as fast as they found them.

By the time Mayor Howard E. Milliken arrived, the egg-hunt was all over.
—Newspaper Article.

IT IS against the law in Los Angeles meat markets to poke poultry on display to see if it's tender.

—Carl H. Schroeder, Poultry Tribune, Feb., 1940.

That Dream Poultry Farm

By Noah Bodine

Condensed from Poultry Item

THERE are a lot of folks who have been saving their dollars and dreaming of the day they'll retire to the quiet of the country. Amid the clatter and bustle of city life, under the grinding influence of salaried jobs, they find fleeting moments of release in contemplating the day that all this can be set aside as a garment which has served its purpose and is no longer needed.

"Ah-h-h", they usually sigh when that vision appears. "Won't it be grand! A little farm; peace and quiet. No subways, no mobs, no rush to punch the clock—just a nice, restful life. We can earn a nice little income with chickens and live happily for the rest of our days!"

I was one of those who dreamed like that. I am also one of those who set out after that pot of gold at the end of the rainbow. I, like so many others, came to a realization that the pot of gold can only be discovered when one is in possession of the magic key.

An Exact Science

There is a possibility for decent livelihood in the chicken business. That possibility is revealed only to those who are sensible enough to realize that poultry husbandry is an exact science — and not a backyard hobby, as the dreamer is wont to envision it. And it's full of pitfalls for the uninitiated.

You've got to know what it's all about, if you are to be successful in keeping chickens. The work isn't hard, but the amount of knowledge one requires to be successful is vast. That's why there are so many broken hearted folks straggling back to those clattering noises and subway crowds each year after having had a fling at poultry keeping and having lost their hard-earned savings in chasing the rainbow.

When one realizes that chickens, as we refer to them nowadays, were originally simply "fowls of the air"; and that in their natural state they were capable of producing perhaps 50 eggs a year; and when we realize that these now domesticated fowls have been refined to an ability of laying more than 200 eggs per bird per year in large flocks, and over 300 in some few cases, we have some idea of the situation.

If we are to have enough eggs from our birds to enable us to sell enough dozens at so much per dozen profit, it is easy to understand that one must know how to get production like that. Since it is entirely dependent upon the biological characteristics within each chicken as to whether those chickens lay efficiently and thus return a profit on our invested capital, it becomes apparent that the man who intends to keep chickens as a business must know something about the scientific angles of this chicken business.

The Item Publishing Company, Sellersville, Pa.
(Poultry Item, April, 1940)

One does not acquire the slightest contact with such ideas when working at a salaried job. Without any knowledge whatever of the fundamentals of success, the newcomer barges into the chicken game with a know-it-all attitude. The really funny part of it is, however, that he will persist, in most instances, in doing things his way though, at the same time, he knows full well he is losing money hand over fist!

The first pitfall he faces, absolutely un-armed, is buying this dream-farm. He usually looks over advertisements in the local papers, sends for circulars, chooses on the basis of price.

It's quite natural to choose on the basis of price. We know how much the bankroll can stand, so a place is offered for $5,000 and the real estate man will take $1,000 down. That will leave, let's say, $1,500 in the bankroll and the real estate salesman assures us that 500 chickens will provide a fine income. That number of birds, he says, would cost $500 and you can feed them the crumbs from the table. So the farm is bought.

Don't Be Too Anxious

Had the buyer not been too anxious, and had he gotten in touch with some of the poultrymen in the neighborhood, he would have been able to learn a lot of things which would have saved him many dollars. He might have learned whether 500 birds would make him a livable income—and the answer would have been, "Of course not!" He would find that crumbs from the table won't adequately feed one bird; that, in the first place, the coop on that farm wasn't big enough to house more than 250 layers, and, in the second place, the ground was too low and would tend to dampness which would wipe out his flock from diseases.

But he's already "hooked"; $1,000 already sunk — and, since he didn't ask those neighboring poultrymen, the poor sucker goes right ahead according to schedule — the schedule, that is, which his city-job dreaming had arranged in his mind.

The 500 chickens he buys were chosen without knowledge of whether or not they were efficient producers. There is a factual basis for such determination, you know, but Mr. Newcomer didn't know it, so the trader with whom he dealt sold him birds which simply couldn't lay enough eggs to pay for their feed.

His coops were always damp and the birds began to die. To fill the gaps, when the coop began to look empty, and with very little experience now added to his accomplishments, some more birds were bought, but the dying continued.

That $1,500 balance had been reduced, in a year's time, to $200, but instead of admitting defeat, Mr. Newcomer was still dogged. He knows by this time he's up against tough competition, but lacks the knowledge to apply in overcoming it. Still going on the "brains" that enabled him to hold his job back in the city, which enabled him to rise from the ranks to, perhaps, chief clerk in his firm. He knows he is no dumb-bell, but he is dumb. He thinks the kind of brains required to fill a chief clerk's job are the same kind that can "lick" the situation he faces.

He must forget everything he ever knew so far as the industrial world is concerned. There are plenty of qualified men to advise him—not neighboring poultrymen, but men trained in the science of poultry husbandry. Yet, Newcomer doesn't go to these available sources of factual information and help. He goes to his neighbors—all, or most all, of whom are in the same boat he is. He takes their conglomerate advice, finds no improvement, and finally becomes so puzzled that he believes no one knows anything about the chicken business.

What has so often appeared pitiful to me is the fact that so many of those who go broke in the poultry business had come into the game from jobs they'd held for many years where only the capacity to think had maintained their status. Yet, with plenty of education as a background, these earnest people continue to watch their fortunes dwindle and vanish without ever realizing why it is occurring!

If anyone is dreaming of getting into poultry farming when he retires from the business world, he ought to know before he buys into the chicken game that the cards are very plainly marked and it is a simple matter for him to "stack" them against himself.

Good Breeding Essential

First, the "tenderfoot" ought to know that one chicken can lay only so many eggs in one year. Some birds are better bred than others in any given breed, therefore, the better strain of any breed can be expected to lay the best number of eggs per bird.

It is evident that our annual income is limited by the number of chickens we keep and the quality of such chickens. Yet, we must also know how to get all possible eggs from the flock, and that means we must know how to manage the flock --feed them and handle them so as to bring out those eggs.

It might be good for the prospective egg-farmer to know that a comfortable living can be gotten from keeping not less than 1,200 to 1,500 laying chickens. The standard of living obtainable from such a flock is that which might be compared to the standard of living one might expect in a metropolitan environment where one's salary is about $20 to $25 per week. It is also important to know that $18 per week income in a rural community will provide a standard of living about twice as high as would a $20 weekly wage in a city.

Now, to own a farm capable of housing and maintaining fluent operation of 1,500 laying chickens would require at least five acres of ground and housing or coopage space of at least 20 feet wide by 300 feet long. In addition to that there must be a building in which to brood replacement birds which will have capacity for brooding from 1,500 to 2,000 baby chicks each year.

Select Location Carefully

Such a farm ought to be on fairly loamy or sandy soil, have plenty of drainage and not be located in a hollow, but preferably on slightly rising ground. In a strictly poultry raising community such as Vineland, N. J., or other poultry centers, such a farm would cost about $5,000 to $6,000 and, after purchase there ought to be a cash balance of around $2,000 in the bank. You can raise those 1,500 laying birds from baby chicks, or you can buy birds already laying. Both ways will cost about the same, with some advantage in cost in starting with chicks.

In raising them from chicks, you have the distinct advantage of knowing their history. In buying layers you must have definite knowledge of judging the stock or you can be very neatly "trimmed." Therefore you should employ the services of some recognized poultryman in your vicinity to select those layers which you buy.

In buying layers, however, you have one distinct advantage. It is the fact that you will get eggs to sell the day you put those birds in your coops, whereas in raising baby chicks to maturity there must be a five-month wait before you can expect an egg at all. Buying mature birds, therefore, means an immediate beginning of cash returns, and for the same reason an immediate income which will help defray expenses of living.

Start Chicks or Buy Pullets?

Whether to start with chicks or pullets will also depend on the season and general conditions. 1940, for instance, may be one of those years when it will pay to raise your own pullets. It is too early to be sure, but it looks as though pullets might be short and higher priced next fall.

It is also wise to realize that your impulse to improve the property cannot be pampered. It costs money, and you're not going to have much leeway, so buy a place that needs little or no repairing before you can get in the business in earnest.

Never buy the first farm you see; never buy any farm without consulting some poultryman who bears a good reputation in the community. You can find him by asking some of the business men in the town, and consult with him not in the presence of any real estate man, but alone. Talk things over with him about the poultry business and get some information "first hand" before your decision is finally made.

There are a lot of folks who have been in the poultry business for many years. They have kept their taxes paid up, there are no mortgages on their farms, they have nice bank accounts. This proves that success in poultry keeping can be had, if only one is sensible about the whole thing.

Poultry Best on Returns from Feed

According to the reports of the Iowa Farm Business Association for the last seven years, poultry flocks have returned more money for every $100 worth of feed than any other class of livestock.

The figures are interesting.

Taking the average for seven years (1932-1938) the farmers' own records show they got back $178 for every $100 worth of feed fed to chickens; $145 for every $100 worth fed to hogs; $122 for every $100 worth fed to dairy cattle; and $117 for every $100 worth fed to beef cattle.

Even in the years when poultry and egg prices were comparatively low, the feed returns from poultry were still higher than the returns from hogs, which were second in line.

—Frank Priebe's Weekly Letter to Poultry Raisers, Feb. 3, 1940.

TAKING no time to dress, John Smeltzer, Berne, Ind., awakened by a noise in his chicken house, grabbed a shotgun, and rushed out of the house. Opening the hen house door he called, "Come out or I'll shoot." Just then Smeltzer's dog, which had followed him out, stuck his cold nose against his master's bare leg. The startled Smeltzer jumped and his gun went off killing sixteen of his chickens. And there was no thief in the hen house.

—Western Poultry Journal, Jan. 1940.

SO VIVID was the dream of Margie Rhodes, Shreveport, La., that some one was stealing her chickens that she dressed at dawn and rushed out to check up. She found 58 of her 60 chickens had been stolen during the night. Two roosters were left.

—Newspaper Article.

Is the Egg and Poultry Industry Serving the Consumer?

By H. E. Shackelton

Pacific Egg Producers Cooperative

Condensed from a Talk

PRODUCERS, processors and distributors recognize their responsibility for supplying consumers with eggs and poultry of high quality at fair prices, meeting the limitations of every pocket book and rendering adequate service. Lack of stability and loss of markets to competitive foods have stimulated the several segments of the industry to greater activity in determination of consumer needs, consumer likes and dislikes as to flavor, appearance and use, various levels of ability to pay and in procurement of answers to other pressing consumer problems.

Progress in Production

For many years, the industry has had the full co-operation of many of the state colleges, the federal government and other agencies, in aggressively attacking through research those problems the solution of which would lead to better breeding, hatching, rearing, feeding, and care of eggs and poultry from producer to the consumer. The industry itself has accomplished much through its own efforts in research and improvement.

Many workers have studied the effects of temperature on eggs and poultry with the result that producers, processors, and distributors can better serve the consumer by handling the products under cool temperatures. These workers have demonstrated that much of an egg's new laid quality is lost in the very first few hours if it is not promptly cooled and kept cool. Consumers can help educate the storekeeper to keep his eggs cool. He will serve you with better eggs if he is told by you that while the shell conceals from him the bad results of higher temperatures while in his store, you as consumers see the difference when you break the shells and see the contents in your kitchen. Although nature has provided a marvelous package whose contents remain untouched by human hands until it reaches your kitchen, it needs cool temperatures from the nest to your table to retain its original freshness.

Quick Freezing of Poultry

The magic of quick freezing is being applied to fresh killed poultry. The industry has many at work to determine how it can make avail-

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 3, 1939

able to consumers the advantages of quick freezing more cheaply and conveniently. In 1938, there was consumed in the U. S. a total of 200,000,000 pounds of various quick frozen foods, according to Edwin T. Gibson in a recent speech at the American Marketing Association meeting in New York City. This is more than six times the volume in 1934. Lower priced low temperature refrigerator boxes for retail stores are being made available so as to encourage wider distribution.

Chickens are being bred to give more white meat. Turkeys are being bred so that consumers who desire a small bird can have just exactly that. Geneticists in Government employ expect to be able to announce after their work has been double checked and the inheritance factors "fixed" that young hen turkeys weighing 6½ to 9 pounds with plenty of breast meat will be available.

Egg Breaking Developments

By reason of development in scientific and sanitary technique in commercial egg breaking plants, bakers, noodle and mayonnaise makers, and other manufacturers are able to buy egg yolks according to official color standards, a specified maximum of bacterial count, a certain percentage of solids content, and in sanitary uniform containers in which the liquid egg meat has been chilled or frozen to retain the quality prevailing when the shell is removed.

"How Good a Consumer Are You?"

Read the following news item on "How Good a Consumer Are You?" which recently appeared in several papers:

"Consumer education of a highly constructive and effective nature was emphasized by an exhibit at the annual Parents' Day held in May at New Jersey College for Women at New Brunswick, N. J. Part of this display dealt with the selection of eggs and poultry, the proper care and refrigeration of eggs classes and grades of eggs and poultry and factors determining quality.

"As measures of broken out egg quality, the exhibit displayed photographs of broken out eggs showing variations in quality according to Van Wagenen and Wilgus of Cornell University. To portray the relation of heat to the deterioration of interior quality, use was made of the folder printed by one of the packers. This folder, with actual photographs, shows the striking superiority of an egg kept cool for one week over an egg kept for two, four or six days in a warm room at 80 degrees Fahrenheit. This superiority was translated in terms of eggs poached, fried or hard boiled and in the candled appearance of eggs.

"The importance of such exhibits with respect to egg and poultry consumption is evident from its immediate influence on parents and students. Of even greater significance is the advantage to be gained as these students become administrators, dietitians and teachers."

As one publication put it, "Here is an excellent example of the kind of channels in which effective effort can be directed toward the goal of increasing public recognition of eggs and poultry as leading dietary items, of building consumer appreciation for the importance of quality of product and proper care and preparation, and of enhancing the stature of the industry in the economic scene."

Distributing Surplus Supplies

The egg and poultry industry has an obligation to inform the housewife when its products are in surplus supply and to provide rapid and efficient means to make its products readily available at reasonable margins. During the last few years several agencies within the industry have closely co-operated with various distributing agencies to achieve the desired results.

A vote of thanks from the housewife and from the egg and poultry industry is due the Independent Food Distributors Council, the National Association of Food Chains, and the National Association of Chain Drug Stores for their efforts to bring the benefits of surplus supplies to the consumers through thousands of retail stores. Because of their willingness to cooperate, the industry has been able to serve the consumer better, to make fine quality available at reasonable prices, and to relieve the pressure of surplus production. It is an excellent illustration how the helpful distributor serves both producer and consumer.

Lessons from Other Commodities

The canned salmon industry in 1936 began its permanent campaign to inform consumers of the excellence of canned salmon. Its object was to stabilize the canned salmon market by increasing consumption to the point where heavy carry overs would be eliminated. Emergency campaigns to relieve market surpluses had been used several times in the past, but in 1936 time was spent in laying down specifications and plans to insure long life and permanency to the advertising effort. Slightly over 91 per cent of the average annual American pack subscribes to the industry fund. In 1937 the advertising budget at 5 cents per case was slightly over $350,000. Last year the amount was double. In the pack year 1936-1937, sales shattered all previous records and exceeded the average of the five preceding years by 45 per cent. All varieties shared in the increases.

The poultry industry would like to take a leaf from the book of the California Fruit Growers Exchange. They began in 1907 when the need of educating the public to a greater use of oranges and lemons was evident. From an original appropriation of $6,000, the advertising budget now reaches well over $1,000,000 for a normal crop year. They use magazines, newspapers, car cards, outdoor signs and posters, farm papers and direct mail. They maintain a national sales organization, conduct research through scientific and educational groups. They have helped to change citrus fruits from a luxury to a staple of American diet.

During the past 20 years, the consumption of citrus fruits has grown five times as fast as the population. In 30 years since the California orange growers started advertising, the per capita consumption has more than tripled and consumption has spread fairly evenly over the year.

As one of the finest examples of service to consumers, we have only to examine some of the work of the National Live Stock and Meat Board, representing stockmen, marketing agencies, packers, and retailers. According to its 15th annual report, its Homemakers Service aims to direct consumer education wherein hundreds of thousands of housewives are taught in person, through cooking schools, newspapers, and radio, how to buy and cook meat, the use of the less demanded cuts, and the place of meat in the diet. During the year, cooking schools sponsored by newspapers were held in 94 cities with total attendance of 800,000. In Minneapolis, the attendance at the final session reached 15,000.

The Homemakers Service supplied information each week on meat buying and meat-cooking to 162 newspapers with a circulation of 5,800,000. Some 6,400 talks on meat were broadcast over 200 stations in 42 states. Practical meat lessons were brought to students in more than 100 Cities through 250 special demonstrations on high school assembly programs. Requests were filled for over 200,000 pieces of literature on meat in nutrition from physicians, dentists, dieticians and nurses and nearly 2,000,000 recipe books distributed to housewives, teachers and others.

Views of Nutrition Expert

From Dr. E. V. McCollum, Johns Hopkins University, internationally known nutrition expert comes a recent observation addressed to the Dairy Industry which applies with equal force to the Poultry Industry. He said, "It is self-evident fact, in the light of what we all know about present-day promotion of doctored foods and vitamin preparations, that constant vigilance and sustained instruction will be necessary in order to prevent great confusion arising in the minds of food consumers as to what they should buy and eat. Those industries which provide the nation with its 'protective foods,' the components of the nucleus of the diet recommended here, must support the necessary enterprise of keeping these facts before the women of the land. . . . . Each of the food industries should, however continually support an educational organization which presents honestly and fairly the knowledge which we possess concerning the properties of all of the foods which we grow and which are combined into our daily menus. Only by such means will the health of the nation be safeguarded."

The poultry industry realizes that only as it serves the consumer better, does it have any right to expect survival and a reasonable prosperity. It does not plead for maintenance of its former position in your menu planning but it aims to lay the facts before you and win by its merit its share of your food dollar, to provide you with poultry products which will please the eye, satisfy the taste, qualify for nutritional needs, meet every pocket book, and make it easy to come back for more.

Chick Embryos Aid Meningitis Studies

When meningitis germs are injected into developing chick embryos, the embryos get typical meningitis like that in human beings, report Dr. G. John Buddingh and Miss Alice D. Polk of Vanderbilt University Medical School in the Journal of Experimental Medicine. They find further that the meningitis germs enter through the nose and travel through the blood to the brain, but do not go directly to the brain from the middle ear, cranial sinuses or olfactory nerve sheathes. Scientists had previously believed that when meningitis was produced following middle ear or mastoid or sinus disease, the germs traveled directly from the ear or sinus to the brain by way of nerves rather than by way of the blood.

❝ AMONG the common sounds and sights on the streets of St. Paul are the gaily colored, auto-powered wagons with radios and loudspeakers to attract attention to the advertisements blazing on their sides. The other day one of those wagons passed our office windows, its loudspeaker blaring and on its sides, you'd never guess it—a promise of good old Fried Chicken at a well-known restaurant!

We thought what a boost it would be for the Poultry Industry if for two hours a day, one day a week, such a wagon would parade the streets of every city calling attention to appetizing, health-building eggs and chicken.

—Poultry Herald, Feb. 1940.

Sexing Offers New Means of Flock Improvement

By G. S. Vickers
Field Manager, Ohio Poultry Improvement Association

Condensed from Hatchery Tribune

A LARGE number of hatcherymen are sold on the use of R. O. P. pedigreed and other good pedigreed cockerels in part or all of their flocks, both for producing chicks for sale and for producing chicks for improvement of their flocks.

Which is the best procedure of getting these cockerels to the flocks, with the least trouble and greatest satisfaction to all concerned? This appears to be a problem of the simplest kind, until you start to do it, and then complications arise.

Three Parties Concerned

There are three parties concerned: the breeder, who carries on the preliminary and most necessary job of producing the stock; the hatcheryman, who distributes the stock to the flockowners; and the flockowners. I have heard of cases where the breeder was eliminated by the simple process of the hatcheries producing pedigreed chicks by means of paper, pencil, and a vivid imagination, but this type of breed improvement appears to be on the decline, especially since people are becoming more discriminating, and since the Federal Trade Commission has one eye cocked on the hatchery business.

How Distribute Cockerels?

The problem is primarily whether the hatcheries shall distribute these pedigreed cockerels as day-old chicks, partly grown cockerels, or as mature cockerels.

Most breeders tell me they carry on their breeding operations primarily to improve their own stock and their own flocks for their own hatcheries, and that the sale of pedigreed stock, either as eggs, chicks, or mature stock, is secondary in importance. This is just another way of saying that most breeders have found there is little profit to be made in breeding, unless a hatchery is operated in connection so that this improved stock can be used to produce better chicks and with which the necessary profits can be made to sustain the breeding operations.

I have known several excellent breeders who did not have hatcheries and who couldn't make a living. I realize that there are a few outstanding exceptions. This is not to be taken to mean, however, that breeders and breeder-hatcherymen do not want to sell pedigreed stock to hatcheries. Most of them do because they can and do produce more good stock than they profitably use in their own businesses, and they naturally want to get the most out of it.

Too Many Cockerels Produced

Many good breeders have sufficient matings that produce more cockerels than can be used, but they generally desire to keep the pedigreed pullets for the home place. Under such circumstances, it works out nicely for the breeder if he can pedigree-hatch the chicks, have them sexed, and keep the pullets and only enough cockerels to meet his requirements. Furthermore, many breeders do not have facilities for growing all the cockerels that would be in straight-run chicks and still have all the pullets desired. Under these circumstances, the selling of sexed pedigreed cockerels is indeed the most desirable practice.

Many others have so many individual matings that they produce more pullets than they can use, and such breeders are glad to sell either pedigreed eggs, pedigreed straight-run chicks, or even sexed pedigreed cockerels and take their chances on selling the pullets at hatching time or at 4, 6, 8, 10 or 12 weeks of age.

A few have sufficient facilities to raise the straight-run chicks to get the pullets, save what males they need, and sell the surplus pedigreed cockerels at any age from four weeks to maturity. Most breeders do not like to raise any more cockerels than necessary, because of the difficulty of getting out of mature cockerels what they are really worth.

Of all these possibilities, the great majority of breeders prefer to sell pedigreed sexed cockerels or pedigreed straight-run chicks because it is the most economical thing to do, all factors considered.

Poultry-Dairy Publishing Company, Mount Morris, Ill.
(Hatchery Tribune, Feb., 1940)

IT IS NOT possible for work people among poultry to contract any poultry disease. There is an exception in relation to birds in general—the parrot. This can be infected with human tuberculosis, and thus, presumably, communicate the disease to human beings. Next, there is Psittacosis or Parrot Influenza, which can affect man.
—Poultry, Sydney, Australia, Jan. 6, 1940.

THE DEVELOPING chick embryo proved to be a satisfactory medium for the culture of Brucella abortus, the organism associated with abortion in cattle, in work conducted by H. J. Metzger and Freida R. Stokes, N. J. Agricultural Experiment Station, whose results were reported in the Journal of the American Veterinary Medical Association for March, 1940.

Progress Through Pedigree Breeding

By Irving Kauder
New Paltz, New York

Condensed from Rural New Yorker

IN THE 1936 Yearbook of the Department of Agriculture, Dr. M. A. Jull said, "In some respects, more progress has been made in the development of breeds of chickens than is the case with any other class of domestic livestock." Very few poultrymen or hatcherymen realize the mountainous detail work being done by some of the leading poultry breeders today. Trapnesting, pedigreeing, progeny-testing, and genetic mating are only the tools used by the modern breeder. Each of these tools involves many types of records, highly skilled help, both clerical and among the birds, and a considerable investment. Each is one way of getting at the mountain of inherited factors which faces the breeder, just as steam shovels, trucks, dynamite, and skilled operators are necessary tools in engineering undertakings.

A Great, Complex Problem

The mountain the poultry breeder has to move is the great, complex inheritance of the chicken. He has to "take a chicken apart" by means of his records, to find what its performance is in 25 or 30 ways; then he has to put the best qualities of his strain together by mating. He is really making 200 eggs per bird where only 100 were before; he is making 90 birds live out of every 100, when only 40 or 50 lived before.

Would you try to move a mountain with a shovel, or try to quarry marble with a screwdriver? That's just how sensible it is for the average farmer, poultryman, or hatcheryman to attempt to improve his flock by breeding. An even greater, but hidden obstacle confronts every poultry raiser who tries to do his own breeding. That's why we say that the poultry breeder's mountain is one he can't see. The laws of inheritance, as established in the science of genetics, are known; but they can't be seen. For a great proportion of the important inherited characteristics of poultry are interior characteristics, whose inheritance can only be judged for the individual bird by the experienced breeder, and only proven by the progeny test. The poultry breeder has to have as highly specialized knowledge and experience as the engineer who plans and superintends the digging of a canal. He knows the theories and natural laws involved; he conceives the plan, directs the work, and makes sure that it is done right.

The Rural Publishing Co., Inc., 333 West 30th St., New York, N. Y.
(The Rural New Yorker, Feb. 24, 1940)

In the old days, a breeder did little more than the farmer might have done. He studied his birds, picked the best looking, mated them, and hoped that they would "nick." He believed, and preached, that culling was the only way to make money with chickens; that, given stock that was selected and even pedigree bred, the poultryman only had to cull out the poor birds to have a wonderful flock.

Careful Study Required

Today, poultry breeding involves the trapnesting of from 500 to several thousand individually pedigreed pullets each year, trapping of pedigree mating hens all year 'round, maintenance of progeny records on every male and female in the pedigree pens, and an annual study of the results of this work, at mating time, which usually takes weeks. This is only the outline.

The best of the country's breeders have a program which is planned to make a better all-round chicken, both in earning power and in looks. Such a breeding program involves far more than breeding for production and egg size and perhaps "vigor." It involves records on, and mating for, most, or all, of the following inherited factors:

Maturity, non-pause, broodiness, persistence, intensity, second and third year production, hatchability, long life, egg shape, freedom from prolapsus, tumors, paralysis, weak ovaries, shell texture, egg color, color of yolk, consistency of whites, egg size, early egg size, eye color, type, color, big bone, ear lobe color, shank color, early feathering, rapid growth, freedom from stubs, side sprigs, split wings.

The astonishing part of it is that a few breeders are actually producing chickens that have far more earning power because of this huge program. Several breeders are producing pens with perfect livability, which indicates complete freedom from any of the factors causing mortality. An increasing number of breeders are getting production and egg size to a remarkable degree.

Better Breeding—Less Culling

What is most important for the poultryman—stock which has been bred along these lines should not need more than a small amount of culling. Most culling is done to take out birds which show signs of weakness or poor production. In strains where livability is high on a flock basis, once production is well developed through progeny testing, so that flock average production and egg size are high, the poultryman doesn't have culls. The best breeders today do not cull their trapnest flocks; they don't have to! They have their family records on every daughter hatched or housed, so that they are continually selecting and breeding from families which don't have culls.

Despite the fact that this work is expensive, there are quite a few breeders who sell chicks at prices the efficient farmer or poultryman can afford to pay. Many hatcheries, too, have learned that they put out the best chicks by getting a better class of stock from the pedigree breeder and building up flocks which are pure of the breeder's strain. Then they go back to the breeder every year for cockerels or other stock in order to keep up with the constant improvement every breeder makes. Such hatcheries realize that they do best to advertise the fact that they have such-and-such a breeder's strain. The good hatchery usually makes no pretentions of breeding on a large scale, but leaves that work to the pedigree breeder.

Many farmers or poultrymen who prefer their own chicks in small incubators buy a good cockerel or two and a few good pullets every year from the pedigree breeder, once they establish a flock of his strain, and replace their flock with chicks from these breeding pens. Every real pedigree breeder today maintains many bloodlines which his customers can use for flock improvement.

Chicks from famous strains have to cost a cent or two more; but they are years ahead of the chicks raised on most farms today. Chicks direct from the best poultry breeders will easily average 180 to 200 eggs per bird housed, with good management; hatchery chicks of the same strain will often average 140-160 eggs per bird housed, or more. When you can get production like that, on a hen-housed basis, you can't have culls. Breeding on a modern basis, complex and expensive as it is, has done this for American poultrymen. It has moved the mountains of inheritance a long way in the last generation.

Now, An Automatic Chick Counter

An automatic chick counter for the use of chick sexers and hatcheries, in general, has been perfected by the Schultz Laboratories, Boone, Iowa. The counter will accept and count chicks at the rate of 50 per minute or 3,000 per hour and will automatically deposit 25 chicks in each section of a 100 size chick box.

As the chick passes the trap door at the base of the receptacle, one of the cogs in the 100-cog gear is moved ahead and the chick is counted. When the twenty-fifth chick passes through the counter, the lower funnel is automatically directed to the next section of the box, until the warning buzzer rings when the 100th chick enters the box. The master counter registers the total number of chicks that have passed through the counter at any time during the season, Schultz explains.

—Hatchery Tribune, April, 1940.

How I Select Birds for Laying Tests

By A. J. Williams
St. Augustine, Florida

Condensed from The New Hampshire Breeder

IF THERE is ever a time in the life of a poultryman when he feels that his spring hatching dates were either too early or too late, his pullet feeding program all wrong, and his fall housing schedule not working out as planned, it must be along in September when he begins to look over his pullet crop for laying test material.

Operates a One-Man Farm

Perhaps this situation exists on my farm only, it being a one-man plant. I take my hat off to the breeder who sends out eight to ten pens of birds that really start off well at the tests and bring home egg records around the top for the breed.

Great effort has been expended in getting birds to the tests; more effort than the layman would imagine, and more effort than many breeders are willing to admit. Therefore, I wish to be understood as believing that a lot of labor rather than magic is behind pens of birds that consistently bring home good test records for the breeder.

Looking for Candidates

In selecting my New Hampshires for the laying tests, I use my best judgment along with a short trapnesting period in selecting unpedigreed birds. In selecting pedigreed pullets, one can trust a bit on his progeny test records. Progeny tested families run fairly true to form, where the pullet selected from the flock requires a pretty good knowledge of what I might call "pullet personality."

The poultryman who really loves the game usually has an eye for the pullet that is apt to "have everything," and recognizes her immediately. After checking this outstanding pullet for age, body weight, egg weight, egg cycle and important coloring points, she becomes a candidate for a test entry.

Of course, such points as broodiness, winter pause and persistency of lay cannot be determined. These points impossible to determine are what constitute the element of gambling on one's pullet selections; the fewer the facts known, the greater the gamble.

No matter whether the selection of contest entries is to be from pullets from flock matings or from progeny tested families, the writer prefers birds that will come up to the following requirements:

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(New Hampshire Breeder, March, 1940)

1. Health: The candidate must have a bright eye, a bright, rich coat of feathers, be active, alert, and have good bone size. The beak and shanks should show a good supply of yellow pigment.

2. Age at first egg: I prefer a pullet that has matured slowly and begins to lay between the sixth and seventh month.

3. Body weight: Five to five and one-half pounds at the time of laying her first egg. Preference is given to birds that feel solid and not flabby fat.

4. Egg weight: The first few eggs should be of good shape and color and weigh at least 20 ounces to the dozen. If the bird is to be trapped for a 10 to 15-day period prior to shipping, the egg size should rapidly increase to 22 to 23 ounces. Pullets beginning with eggs under 20 ounces seldom increase their egg weight to 22 to 23 ounces in the short trapping period and are likely not to make 24-ounce eggs for several months.

5. Egg cycle: One cannot get a very accurate idea of a pullet's egg cycle under a 10-day trapping period. However, there are some exceptions. The average pullet showing a cycle of at least four eggs during the first 10 days of lay or a cycle of six eggs during the first 15 days stands a very good chance of doing much better in respect to length of cycle.

6. Coloring: The pullet should be a fair example of the coloring of your flock.

Feedstuff Flying Squad Organized in England

As is only too well known to poultrymen, it is as easy to get feeding stuffs in one part of the country as it is difficult—not to say impossible—to others. The reason, of course, is the "overloading" of some ports by ships which have been unexpectedly diverted from their usual port of call.

To prevent such local shortages, a special "Flying Squad" scheme has been completed by the Ministry of Food for a more even distribution of feed supplies for poultry and cattle. A night-and-day service will work from now on so that with a minimum of delay grain and other feeding stuffs from overseas may be transferred to coasting vessels, special trains and road transport convoys.

—Eggs, London, England, Jan. 3, 1940.

IN GERMANY, war-time penalties are so severe that a 29-year old man was sentenced to death for the theft of 200 chickens, 50 rabbits, 12 pigeons and five ducks during the past year, according to a United Press dispatch.

How to Figure Your Brooding Capacity

By H. E. Cosby
Oregon State College

Condensed from The Eggsaminer

ANY poultryman is sitting on a keg of dynamite and just waiting for someone to come along and light the fuse when he violates the rule of adequate space for chicks under any brooder.

The deceptive thing which causes so many to crowd chicks during the brooding season is that the chicks do not appear to be seriously congested when first put under the brooder. We pay tomorrow for the mistakes of today. Anyone who cannot look far enough into the tomorrow of brooding to recognize the following four facts might just as well hoist the white flag of surrender:

First: The brooder will be used for several weeks or until the chicks are old enough to do without the heat and are on the perches at night.

Second: The chicks at eight to ten weeks of age will be from 13 to 18 times larger than when they were started.

Third: The brooder does not expand to care for this increased size of the chicks.

Fourth: The brooder room does not increase its dimensions to correct the errors of over-crowding.

Measuring Brooder Capacity

The capacity of any brooder can be determined with reasonable safety by figuring the number of square inches of heated area under it and dividing by seven where straight-run chicks are to be brooded and where it is definitely understood that all the cockerels are to be separated at 4 to 5 weeks and moved to other quarters.

Where sexed day-old pullets are to be brooded, there will be no cockerels (in numbers) to remove, so the capacity of that brooder should be determined by dividing the square inches of heated area by fourteen instead of seven.

Shape of House Doesn't Matter

There are brooder houses constructed of frame, metal, brick, concrete and tile. They may be portable or permanent in type. They are rectangular, circular, square and octagonal in shape. To conserve labor, prevent soil contamination and control disease outbreaks during the brooder period, these houses may employ the use of new ground, concrete, board or wire artificial yards. None of these shapes and styles has any particular bearing upon the suc-

Pacific Cooperative Poultry Producers, 306 S.E. Ash St., Portland, Ore.
(The Eggsaminer, February, 1940)

cessful brooding of chicks up to the age when they are old enough to go on range.

Size of Room Important

That factor which does mean something to the producer's welfare is finding out how many chicks he can brood in his particular brooder house. The capacity of the brooder room is of even greater import than the capacity of the hover because the pullets have to stay in the house longer than they need the artificial heat supplied by the brooder.

The poultryman builds his own brooder house. If he over-crowds his own creation, he can blame no one. He can, with reasonable accuracy, determine the capacity of his brooder house by multiplying the number of square feet of floor area by two, where he is brooding straight-run chicks and all cockerels are to be removed at 4 to 5 weeks of age.

In case one is to brood sexed day-old pullets, it is necessary to multiply the square feet of floor space by one in order to determine how many pullets can be brooded to range age in that room.

Crowding Easily Done

The failure of so many folks to correlate the capacity of the brooder with the capacity of the room used has caused as much grief and financial loss as most any other error of oversight in the poultry business. Many have conscientiously purchased a brooder of true capacity-rating and then used it full blast in a room too small for that number of chicks to range age.

For example, let us think of a canopy type brooder which is 64 inches in diameter. This has a heated area of over 3,200 square inches. Dividing by seven we find that this brooder has a top load of 460 to 500 straight-run chicks only up to the time of separating the cockerels. Dividing by 14 we find that 230-250 sexed day-old pullets is the load for the brooding period.

What happens, though, when this brooder is set up and operated with 500 chicks under it in a room 12 by 12? This size room has a near capacity load with 288 to 300 straight-run chicks (cockerels to be removed).

The house carries 200 more straight-run birds than its capacity. The brooder doesn't grow, the house doesn't grow, but the chicks do. On a sexed day-old pullet basis the brooder accommodates 230-250 chicks, whereas the house will accommodate certainly not to exceed 150 to range age. Under normal crowded conditions where air, heat and moisture prevail, the chances are ideal for an acute outbreak of coccidiosis. All the various and vicious forms of cannibalistic habits are likely to become established. The mortality rate is higher; all too convicting is the evidence of unevenness in growth and the more than normal number of tail-enders which survived only to be culled out.

Crowding Never Pays

We would not expect to raise very good ears of corn if we planted eight grains to the hill and spaced the hills only six inches apart. We shouldn't expect to raise good pullets, regardless of their source, if either the brooder or brooder house or both are out of line in providing the minimum space required for the growing fowls.

Aside from just not thinking the thing through, the only reason ever given for so much crowding of chicks is that of saving the expense per chick of brooding. It is never good business to bet a good dollar pullet against one or two cents saved by hazardous brooding, especially so when one knows he usually loses the bet. There are sufficient hazards in the business without pulling against one's own best interests with the few factors he has under his own control and supervision.

Keep Poults from Starving

In experiments conducted at Texas Agricultural and Mechanical College, College Station, Tex., it was noted that there is a greater mortality among poults than in baby chicks in the first few weeks of life. This death rate was attributed to starvation. After making a study of this factor and trying to devise some means of preventing it, it was found that when poults were raised in colony brooder houses and were given daily care and hand feeding or the use of older poults was employed to instigate feeding habits, there was an 8 to 10 per cent reduction in poult mortality.

Although it is not advisable to place many older poults in with day-old poults, it is a good practice to place a few poults in with younger poults to teach them to eat. After the poults have once learned to eat, the older poults can be taken away. Large poults have a tendency to "bully" young poults and should not be allowed to stay with them any extended period of time.

—Turkey World, March, 1940.

¶¶ A SHEPHERD dog which teaches chicks to roost, is prized by Oliver Fowler, according to Pacific Rural Press. The dog has been taught to walk back and forth in front of the roosts, herding the chicks back onto the roosts with minimum fuss and trouble.

POULTRY RESEARCH

Protein Level and Slipped Tendons

Experiments with various levels of protein supplied by dried milk, soybean oilmeal, corn distiller's grains and meat and bone meal indicate that there is no correlation between the level of protein in the ration and the occurrence of slipped tendons or perosis in chicks, according to studies by H. L. Wilcke and C. D. Lee reviewed in the annual report of the Iowa Agricultural Experiment Station for the year ending June 30, 1939.

A diet made up with a high phosphorus but comparatively low manganese content did not produce perosis in one lot of turkey poults.

Turkey poults fed starting rations varying from 18.5 to 26.5 per cent protein did not develop perosis.

Oat Hulls Prevent Gizzard Lesions, Aid Growth and Feathering

When hulled oats made up the sole cereal grain portion of a ration with dried milk as the protein supplement, the growth of the chicks was poor, the feathering was of poor quality, and gizzard lesions were produced in practically all of the chicks on this diet, according to the work of H. L. Wilcke and B. H. Thomas summarized in the annual report of the Iowa Agricultural Experiment Station for the year ending June 30, 1939.

The substitution of 20 per cent of wheat bran for that amount of hulled oats aided growth and feathering, but did not prevent gizzard lesions. The addition of yeast, paper pulp and grit decreased the severity of gizzard lesions. Both yeast and paper pulp aided growth, but grit did not.

The addition of 30 per cent finely ground oat hulls prevented gizzard lesions, increased the rate of growth and improved the feathering.

Feed Consumption of Chicks Increased With Granular Feeds

Work by H. L. Wilcke and B. H. Thomas, according to the annual report of the Iowa Agricultural Experiment Station for the year ending June 30, 1939, indicates that granular feeds are consumed more readily than extremely fine feeds, resulting in increased growth of the chicks.

Indoor Hen Battery Mortality

Under indoor laying battery conditions, paralysis, leucemia and emaciation have constituted an important mortality problem, with losses ranging from 20 to 60 per cent of the hen battery population, reports M. W. Emmel in the Journal of the American Veterinary Medical Association for March, 1940.

Adverse atmospheric conditions as related to inadequate ventilation and excess population are responsible, according to Emmel, for paralysis, leucemia and chronic hemocytoblastosis, a condition of progressive emaciation in which the comb becomes pale, slightly grayish in color and shriveled; droppings are scant and often whitish green in color; and the bird becomes anemic.

He found that in one experiment in Florida, using 250 Barred Rocks, 125 of which were kept indoors in batteries with good ventilating conditions, and 125 kept indoors in batteries with poor ventilation, under closed or poor conditions of ventilation mortality from paralysis, leucemia and hemocytoblastosis amounted to 32 per cent; and under good ventilating conditions mortality was 16.8 per cent. None of the control birds kept outdoors died of these manifestations.

In a second series of tests, 93 R. I. Red pullets in four different trials were reared outdoors for six months, then moved indoors to hen batteries. After being transferred, 41.1 per cent of the birds developed fowl paralysis, leucemia or hemocytoblastosis during the eight months they remained indoors. None of the 21 control birds kept outdoors developed any of these manifestations.

In another experiment extending over a period of three years, a varying number of Barred Rocks were reared and housed in batteries during each successive one-year period. During the first year, a population of 75 was reduced to 42. During the second year, a population of 100 was reduced to 41. During the third year, only one of 37 birds died, that during the first month of the test. This investigator believes that each indoor hen battery plant has a rather definite biological saturation point, that a rather definite number of birds can be kept successfully under the environmental conditions surrounding each plant. When excess is reached, trouble starts.

Cholera Occurs Most in Winter

Birds are most susceptible to fowl cholera during winter months, according to L. D. Bushnell, Kansas Agricultural Experiment Station, in Veterinary Medicine, April, 1940. Following is the seasonal incidence of this disease, measured in per cent, in Kansas: January, 15.1; February, 20.4; March, 17.8; April, 7.1; May, 3.9; June, 1.2; July, 3.9; August, 3.9; September, 3.9; October, 4.7; November, 7.8; and December, 10.6.

The exact reason for this monthly variation is not known. It cannot be explained entirely on the basis of age susceptibility, but is probably due partly to management, according to Bushnell. During winter months, birds are confined closely, forced for production, obtain less exercise, and are fed large amounts of a high protein diet. That sanitation is an important factor is indicated by the fact that since owners have learned to care for their flocks properly, fowl cholera has almost disappeared. Bushnell feels selection and breeding for better birds also has been a contributing factor in the decline of this disease.

Treating Chickens for Botulism

By injecting 5 cubic centimeters of polyvalent botulinous antitoxin under the skin of birds suffering with botulism (limberneck), and then administering one dram of magnesium sulphate in water with a dose syringe, workers at the veterinary hospital of Dr. Thomas P. Crispell, Parsons, Kans., were able to bring about complete recovery of 20 out of 22 affected birds, according to C. H. Kennedy in Veterinary Medicine for April, 1940.

In some instances, a second or third treatment was necessary. In another case of botulism, three birds which received 5 cubic centimeters of the antitoxin without any magnesium sulphate recovered completely in 24 hours. Of 12 birds that received 3 cubic centimeters of the antitoxin and one dram of magnesium sulphate in water, four birds died and it was 96 hours before the other eight recovered.

Breed Differences in Conformation of Adult Female Fowl

After studying heritable differences in body conformation of 1,487 females of six different varieties, R. George Jaap and R. B. Thompson, Oklahoma Agricultural Experiment Station, conclude in Poultry Science (Vol. 19, No. 1) that White Leghorns have proportionally longer shanks and great anterior body depth than any of the other breeds and varieties studied, R. I. Reds, Barred Rocks, White Rocks, White Wyandottes and Buff Orpingtons. Shallowest in proportional body depth were Barred Rocks and R. I. Reds. The investigators found that proportional length of the keel of the sternum is inherited, but does not produce much change in plumage outline or dressed appearance of the bird.

The workers feel that these measurements of adult females and similar ones for males are valuable for use in obtaining uniformity of conformation, for estimating table quality of the live bird, scoring live birds in laying trials, and other uses where selection or records of body shape are desired.

Lung Lesions Indicate Pullorum

By T. S. Townsley

Reprinted from Smith's Chickagrams

ONE phase of the pullorum problem which has not been given much publicity, but which, nevertheless, is one of the most easily found indications of the disease is the prevalence of lesions and inflamed areas in the lungs of badly infected chicks.

Where heavy losses of chicks are experienced during the first two or three weeks of brooding, examination of the lungs will usually show very definite involvement of a considerable amount of the lung tissues, and it is not uncommon to find that one or both lungs are almost completely solidified when the chick dies.

These lung lesions vary from dark red inflamed areas to small or large spots of creamy or yellowish appearance that may entirely fill the lung tissue involved.

The easiest way to observe these lesions is to loosen gently the lungs from the ribs of the dead chick, and to examine carefully the tissue that lay along the ribs.

Any discoloration of any section of the lungs of baby chicks that varies from the normal light red color, or solidification of any section of the lung, is justification for suspecting an outbreak of pullorum.

Cultures of the lung lesions often show the presence of a variety of organisms, indicating that much of the solidification of tissue may be caused by secondary invaders. However, cultures from the heart, blood, or spleen, when the lungs are involved, usually show definite pullorum infection, and indicate that the weakening effect of the pullorum organisms probably paved the way for pus forming organisms to get a foothold in the lungs and cause disastrous results.

No Pullorum, No Lung Lesions

A rather definite indication that lung lesions in baby chicks result from pullorum, rather than from any other influence, is the fact commonly observed that where pullorum disease is under control, there is seldom, if ever, any indication of lung trouble in the baby chicks that die.

Some investigators are of the opinion that where the chicks inherit pullorum through the egg, death comes so quickly that the lung lesions do not have time to form in any quantity. However, that where the infection is picked up at hatching time, as government researches have shown can easily happen with any type of hatching equipment including hens, the

The Smith Incubator Corp., Bucyrus, Ohio
(Smith's Chickagrams, March, 1940)

course of the disease is prolonged so that pus forming organisms of several different types have an opportunity to establish themselves in the lungs of the chicks weakened by the pullorum infection.

Just what effect pus pockets in the lungs of baby chicks, that may not result fatally, might have on the lungs of the mature bird that has withstood a pullorum attack during the brooding period has not been determined, but there is at least a possibility that some permanent lung injury may result, and that the peculiar lung trouble being reported from certain sections of the country in mature birds may be an outgrowth of pullorum infection in the chicks.

Controlling Pullorum

The two proven methods of controlling pullorum infection in baby chicks are: First—Thorough testing of all breeding stock and the elimination of all reactor birds, and Second — Preventing the spread of pullorum in the incubators through down particles from chicks, that may have inherited the infection; by fumigation to kill the organisms on the chicks; and control of chick down travel through down eliminators, and high relative humidity at hatching time.

More Feed, More Egg Cases

You might think feed made hens quit laying, judging by the way some flock owners begrudge the feed they give their hens.

When you get plenty of good feed going into the hen's egg-making department, things begin to happen that make flock owners happy.

The assembly room puts on extra help, phones for more egg shells and clears the track for speedy deliveries.

When that's the situation, the flock owner can order extra egg cases and fancy cartons with confidence.

—Willard Hayden, New Jersey Farm and Garden, March, 1940.

KANSAS CITY, Missouri, police recently took a Negro, Jasper P. Bradley, to jail because they thought he had too many skeleton keys and screw drivers in his pockets. While being questioned, Bradley denied he had ever been convicted of a crime.

"Didn't you serve a prison term in Oklahoma for theft of chickens?" asked Inspector Harry Reid.

"Oh, that," replied Bradley. "That wasn't for no crime. It was for tampering with domestic fowls."

Protecting Poultry from Predatory Animals

By Mrs. R. C. Beagle

Condensed from The Dakota Farmer

ELK Creek, its banks, bends and curves, timbered with large old cottonwoods, runs through our place, not far from where it empties into the Little Powder River. Hence, from the creek and trees we have raccoons, skunks and owls to contend with, and from the pine covered hills bordering the valley come the coyotes and bobcats.

Lighted Lanterns and Sulphur

As there is little demand for turkey hens prior to April 15 when we begin hatching, and as the turkey hens are determined to have young broods of their own, they lay, set, hatch and rear their young on the creek bottoms that have heavy growths of rosebushes, buck brush and sage brush; also plenty of shade, without being molested by coyotes, provided I do not neglect putting out lighted lanterns each night. Around those lighted lanterns I place a strip of red or deep orange paper about 10 inches wide. (On some lanterns it is necessary to have the paper well over the bowl in order that a strong wind may not blow the light out.) On top of the lantern, I place a pinch of sulphur.

Prior to using those red lights and slowly burning sulphur, turkey hens were pulled from their nests and torn to pieces. If a mother hen and her young slipped away in the evening and remained out for a night, they were destroyed before morning. And often in the morning they were attacked and a number of them killed when crossing the creek.

Knowing that sheepmen endeavor to flag their young lambs by means of fires, burning blasting powder and sulphur, and some spray a mixture of creosote on their ewes, I hit upon the plan of red lights, sulphur and creosote some six or seven years ago and have continued to follow that plan since.

Three such lanterns, one suspended from a limb of a tree in a bend of the creek to the east, the second suspended from an old willow about the center and the third on the ridge overlooking the flat from the west, protect a strip of creek bottoms (we call them the creek flats) some 100 rods long and 30 rods wide. Those flags are put out nightly as long as any of the birds are disposed to range creek

The Bushnell Company, Inc., Aberdeen, S. D.
(The Dakota Farmer, Mar. 23, 1940)

flats and loaf under the shade of trees along the creek.

Curbing the Owl Menace

From past experiences I realize that I may expect nightly raids from owls if there are any stakes or projections overlooking the roosts or tall posts nearby. An owl will alight on some high object nearby or overlooking the roosts, then fly to the roost, pick off a convenient bird and pull his neck out from between the shoulders. The owl eats what he wants of the bird near where he picks it off. When an owl can get away with several birds in an evening, little or no flesh is eaten and I am of the opinion that he drinks the blood from where the neck is pulled from between the shoulders.

Should the night be light enough for the turkeys to see the owl above them, almost instantly nearly every bird of the several hundred leave the roosts, flying in all directions; some striking against the house, trees and other farm buildings, some tearing themselves on barb wire fences, while most of them alight far out in the fields and meadows, where they are at the mercy of the prowling coyote, unless flags are set out far enough to encircle the birds. For such flags I use tall cans partly filled with ashes to which is added a large pinch of sulphur and some creosote. If hot ashes may be had, I add a fireshovelful or two to the mixture. If there are no hot ashes, I pour kerosene over the mixture and light with a match.

Lanterns placed under the roosts will quiet the few remaining birds and guide those that did not fly so far away back to the roosts.

Muslin Flags and Traps

During August, 1932, owls began to pick off 10-week-old turkeys from the roosts adjoining the brooder house at the rate of four or five a night. The only tall post within 20 rods of the brooder house was a corner post of a small garden plot about 30 yards to the west. The support to the southwest corner of the roosts extended about 2 feet above the roosts and one roosting pole extended about 3 feet west of the frame. It was quite evident the owl got a line on the birds from that tall post, then flew to the pole that extended to the west and picked off his bird, and repeated until he had his four or five. I set a trap on the tall post, but Mr. Owl avoided that. Even took chances placing a trap on the support that extended above the roosts, removing it before the birds began to leave the roosts in the morning. Mr. Owl avoided that, too, but continued to pick the birds off the roosts. As a last resort I took a width of white muslin and stretched it from the brooderhouse on the west side of the roost to the taller support, and saw to it that no birds roosted on the west side of that cloth. I also placed a lighted lantern to the south of the roosts. After that no more birds were taken off those roosts, and within two weeks, two owls were caught in a trap on the corner post of the garden.

From several experiences since then, I observe owls avoid posts or projections that are topped with squares of white muslin with the ends loose to wave in the breeze. And they also avoid the vicinity of a lighted lantern.

At the center of a knoll about 300 feet long, away from other buildings, we rebuilt our turkey shed last fall. From the rear of the building the knoll slopes toward the creek, and in front of the building it slopes gradually to the south, and on this slope the permanent roosts were built. All supporting posts were sawed off level with the frame work leaving no stakes or projections from the shed. Most of the trees are to the northwest, north and northeast. The shed obscures the view from those trees and the turkeys now roost undisturbed. There is a good view of the roosts from the house, and unwanted cars or trucks would find it difficult to approach the roosts without passing through our door yard.

Bobcats, Coons and Skunks

Bobcats pay no attention to flags. They will enter buildings and climb roosts in search of birds and carry their prey quite a distance, then eat them from the back. As a bobcat is not trap shy, he is easily trapped, once you locate his trail. He usually follows a road or path leading to the farm buildings.

A raccoon raiding a nest leaves the egg shells with the appearance of young birds having hatched from the small ends of the eggs.

A coyote trap (with fresh hen eggs placed in for bait) set in a nest recently raided, or on the spot where young birds were taken from their mother, will catch Mr. Coon.

A skunk will reach under a turkey hen, pull out an egg and eat it near the nest without disturbing the hen, and repeat until he has had his fill, and return the next night and the following night until he has cleaned up the eggs.

When I discover a skunk is at work, I remove the eggs from under the hen, set a trap (with tested-out eggs for bait) under a bush or crate near the nest and Mr. Skunk is soon caught. A hard blow with a stout stick across the middle of his back will kill him instantly. Then look for his mate. You will find him about the place somewhere. Skunks always travel in pairs. If you find him in the henhouse, a light held on him will detain him until someone comes with a gun or club.

When a skunk raids an open nest, he leaves the eggs looking as though each one had been hit by a small hail stone.

Crops for the Range

By Fred V. Grau
Pennsylvania State College

Condensed from American Poultry Journal

THE importance of satisfactory poultry ranges is emphasized by the large number of poultrymen who are considering grass as a part of the summer diet of their flocks. They have realized the value of fresh green grass as an important source of carotene and vitamins in poultry diets, and are inclined to feel that a clean, short sod is one of the best ranges on which to grow young stock. Sanitation is one of the important features of a good range. In short, the aim of the poultryman is to have a range that will: (1) produce palatable nutritious green feed; (2) maintain a dense sod for sanitary purposes; (3) stand severe punishment; (4) maintain succulent growth throughout the season.

Solid Ground Cover is Best

Any of the taller legumes that shade the sod and retard the evaporation of moisture from the surface are objectionable. Flocks need a range that dries quickly and thus minimizes the moisture problem. With alfalfa and red clover, the soil is seldom covered with a sod. In rainy periods, the range is usually quite muddy. The inclusion of sod-forming grasses and legumes would overcome this objection.

Practical poultry raisers like closely-cropped blue-grass-clover sod for their ranges, principally because it covers the soil so completely. This type of sod has been shown to be one of the most important sources of protein in home-grown feeds. Such sods yield well. For two years, the yields of several bluegrass-clover pastures in several counties in Pennsylvania were measured, and an average taken from a number of pastures indicated a green-weight yield of over 12 tons to the acre in the season. When dried, this resulted in nearly 3 tons of clover-bluegrass hay that analyzed 25 per cent protein on the dry basis.

These pastures were developed into good sods without plowing them and without seeding them. Lime, superphosphate, and manure were the only materials added to the soil on the surface. Close grazing of the animals was encouraged by the white clover which sprang up after treatment. This tended to reduce weeds, but they were further discouraged by competition and by periodic mowing to prevent seed production.

Clover-bluegrass sod is fine in normal season, but when prolonged droughts occur, there is little or no growth. Bluegrass is one of the first of our economical important grasses to become "dormant" in dry periods. This has taught us to seek further for a mixture of grasses that may tend to prolong good range conditions even in dry weather. Some of the grasses and clovers that may be used in a poultry range mixture are suggested here, together with their qualifications and limitations.

Kentucky bluegrass forms permanent dense tough sod with good treatment and management, combines well with the small types of clovers, stands close picking. Palatable.

Timothy forms open, loose sod, inclined to bunchiness unless sown thickly or in a mixture. May be injured by drought and close picking. Palatable.

Perennial ryegrass. A rapid grower, producing range in 4 to 6 weeks. Stands severe punishment, is fairly permanent. Combines well with small clovers. Stands reasonably close picking. Palatable. This grass, together with white clover, forms the major part of forage on large poultry ranges in England.

Meadow fescue. A tough, sturdy grass that stands punishment. Starts early in the spring. Fairly palatable.

Orchard grass. Thought by most farmers to be a nuisance due to its bunchy habits in old orchards. Recently discovered to be nearly as nutritious and as palatable as Kentucky bluegrass when properly managed. Starts very early in the spring, is drought-tolerant, and produces feed late into the fall. Deserves a trial on poultry ranges in a mixture on account of its great resistance to severe punishment. Should be limited to very dry, stony, slopes where it is difficult to grow bluegrass. Must be mowed frequently to avoid bunchiness.

Alfalfa. Objectionable with some poultrymen due to tall growth, yet palatable, nutritious and drought-tolerant. May be used sparingly in a mixture.

Ladino clover. A giant type of white clover that forms a dense mat on the ground, stands punishment well, is palatable and nutritious, and is fairly drought-tolerant. Expensive at present, but only small amounts are needed. Deserves a thorough trial.

Kent wild white clover. A low-growing, small-leaved, white clover that forms a dense mat. Seed expensive, but only small amounts are needed. Stands severe punishment, improves under close picking. Extensively used with perennial ryegrass for ranges in England. Very palatable and nutritious, but may not stand severe drought as well as Ladino and alfalfa.

One more legume might be added. That is **common lespedeza** which requires inoculation. It is one of the outstanding legumes in the South for pasture and should fit into poultry range management in those sec-

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(American Poultry Journal, March, 1940)

tions where it can be grown successfully.

A suggested mixture of grasses and legumes is given here, only as a guide for those who plan to make new seedings or to renew old worn-out ranges. It is not to be expected that this mixture will be satisfactory for all conditions.

	Lbs. to Acre
*Kentucky bluegrass	5
Timothy	3
Perennial ryegrass	5
Orchard grass (include only on dry, stony slopes)	5
Meadow fescue	4
Alfalfa	3
Ladino clover	½
Kent wild white clover	½
Total	26 Lbs.

*Cut to 3 lbs. and add 3 lbs. Canada bluegrass on dry, stony slopes exposed to the sun.

This mixture should produce equally good results, under normal conditions, whether sown in August or in April. In either case, it is best to seed the mixture clear without a nurse crop of small grain. The ryegrass acts as a nurse crop for the other seeds, since with adequate moisture in the soil, it will come up in 5 to 6 days. August seedings are preferred where they can be made, because at this time, it is usually possible to prepare a better and cleaner seed bed than in the early spring and there will be less trouble with weeds. Fall seedings are usually favored by rains, whereas in the spring a dry May or June can often ruin a young stand of grass. The earlier the seeding is made in the spring, the better chance it will have to produce range by June 1 to 15.

Preparation of the seed bed differs from that for wheat or oats only in that it should be more firm. This mixture may do poorly on a loose seed bed which dries out rapidly. A firm seed bed maintains a continuous supply of moisture from the subsoil and will not dry out readily. If the ground is plowed, it should be harrowed and rolled several times to crush all clods and produce a fine tilth.

Lime Improves Range

For best results, the lime requirement of the soil should be completely satisfied before the seeding is made. The soil should be tested to determine how much lime is needed. County Agents are equipped to do this. Best results from lime are secured when it is applied as long in advance of seeding as possible—several weeks if possible, a longer time is still better. It should be thoroughly worked into the soil by harrowing. Subsequent lime applications usually need not be made more often than every 4 to 6 years.

Fertilizer Requirements

Fertilization before seeding on a new piece of ground should consist of a balanced (complete) fertilizer analyzing 4-12-4 or 4-16-4, both common fertilizers available at nearly all agricultural dealers. If an old poultry range is being renovated, 20 per cent superphosphate will be all that is needed due to the accumulation of manure which furnishes sufficient nitrogen and potash to insure a good growth of grass. The amount per acre should be not less than 500 lbs. for best results. This will give the new seeding a quick start, an important factor in establishing a good sod. The fertilizer should be applied on the surface and harrowed in a few days in advance of seeding, or at the same time if the grass drill used has a fertilizer attachment.

Sowing the mixture with a grass drill or alfalfa seeder will generally be more satisfactory than broadcasting the seeds and trusting to luck that they will find a favorable place to germinate. Drilling requires a lower rate of seeding, since it places the seeds in direct contact with the soil where they have the best chance for rapid germination and establishment.

Old timothy sods need not be plowed to be renewed. Simply apply the lime and fertilizer on top, loosen the surface thoroughly with a disc and spring tooth harrow, drill in the seed mixture, and finish with roller or cultipacker.

Temporary ranges for turkeys may be established by sowing domestic ryegrass in corn after the last cultivation. This produces good spring range. It can be improved by adding 4 to 5 lbs. of sweet clover and 3 to 4 lbs. of alfalfa to the acre with the ryegrass, seeded at the same time.

Most grasses tend to produce seeds in May and June. When this occurs, the forage becomes tough, stemmy, woody, and unpalatable. To renew the fresh succulent growth, it will be necessary to mow the ranges several times during the season. Allowing the grass to grow tall will not only be undesirable for the flock but it will tend to drive out the very desirable legumes in the mixture. An ordinary farm mower may be used, pointing the guards down so that the old tough grass will be clipped off as close to the ground as possible. The new range should be clipped closely before the birds are turned out in the spring.

Good Management Counts

Once the range is established, it should be possible to maintain it for an indefinite period by clipping it periodically and by fertilizing the sod on top once a year in the fall with 400 lbs. of 20 per cent superphosphate to the acre—lime one ton to the acre once every 4 to 6 years, if soil tests indicate that lime is needed. Bare spots around the range shelters in the fall should have the accumulation of droppings scraped off as soon as the shelter is moved. The soil should then be loosened by raking or spading and the area seeded to straight perennial ryegrass.

Those farmers who practice strip cropping will find the sod strips after hay a desirable place for free-ranging poultry in movable shelters. The adjoining corn strips furnish the required shade, and the slope which makes strip cropping necessary furnishes the desirable surface drainage.

Lights for Brooding

Are lights really valuable in brooding chicks? We think so. Anyone knows that after chicks are a week old they start grouping in corners of the house at night. Habits are easily formed, and spreading the chicks soon becomes a nightly chore that requires time.

By using a small 7½ watt ruby bulb in the top of the house just enough light is provided to give a dim glow. The chicks form in small groups over the entire pen, and move toward the stove as more heat is required. The bunching and crowding are eliminated.

With the use of lights comes the question of the chicks feeding during the night. The tiny 7½ watt light gives enough illumination to allow some feeding and drinking, but observations show that it is limited, certainly not on a par with a 25 or 40-watt lamp.

When maximum growth is needed, as in broiler raising, it is doubtless desirable to allow full feeding at night. In growing replacement stock, however, the general feeling is that only dim lights should be used and night feeding kept down to a minimum.

A few years ago we weighed feed at 4-hour intervals over a 24-hour day in pens strongly lighted, dimly lighted, and one pen where the light was limited to only 8 hours. The results showed that the strongly lighted pen had no high peaks in food intake, but ate more or less over the entire 24 hours. The dimly lighted pen ate a small amount during the night, but the peaks were in the first and last hours of the normal day. The 8 hour day group (8 A.M to 4 P.M.) ate ravenously from 8 to 9 A.M. and 3 to 4 P.M., but could not pack in enough feed to equal the dimly lighted group.

The weights of the chicks, as one might expect, were in direct relation to the food intake: First, strongly lighted group; second, dimly lighted; and third, 8 hour group.

—John H. Vondell, Featheredfax, Feb., 1940.

ROTTEN eggs, cottage cheese and sand were used in the 15th century as mortar for brick walls of the famous Kremlin Palace at Moscow.

—Carl H. Schroeder, Poultry Tribune, April, 1940.

Diary of a Poultryman

By Percy S. White
Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

April 1—Once again, the month of responsibility rolls around. It is well nigh on to chick time which means work and then more work. If one can call what I have been doing all winter work, then that so-called work has been child's play compared with what is to follow. This chick rearing is a job which must be done, but one which I don't especially relish. If I should fail or rather fall down on the job, I would be financially lost. But it is somewhat like going to the dentist, I hate to go, but feel relieved when the day actually arrives. After I get into the swing of the additional work, it really isn't such a bad job at that. The big idea is to have the houses ready for the chicks before they come.

April 3—A division of labor, that is what we practiced today. Harold worked on the brooder houses; Fred pruned the evergreens; I took care of the stock. Harold is preparing the round houses, the bended-bow rafter brooder houses first. We get the chicks for them first, 1,500, and thereby take this brooding business by easy stages. Four days later, we get 3,000 more. Then we are in hot water sure enough.

April 5 — Harold has two of the brooder houses ready, all but placing the smoke stack and the peat moss. The stoves were thoroughly overhauled last summer and painted with oil to prevent rusting, but he goes over them again. All oil pipes are blown out with an automobile pump to remove any rust particles. When we fire them up, we want percolation to start immediately.

April 6 — Shot at a couple of the neighbors' dogs. They tore out of here like mules tearing out of green corn. I am not taking any chances this year with varmints that run on the ground or fly in the air. They are all going to get the same treatment, buckshot and steel traps. A cat that has been prowling around here is going to land in the incinerator some day. Ashes are ashes and don't leave any incriminating evidence.

April 8—Cold, sunshine, rain and snow — a typical April day. All the brooder stoves and equipment were distributed among the houses a few days ago. When a day like this comes along, we can work under cover and make good time. Harold has all the stoves set up, spirit-leveled east and west, north and

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(Everybodys Poultry Magazine, April, 1940)

south. The smoke stacks were set in place to see that they were straight up, the paint bucket, 1 gallon size, replaced over the roof flange to prevent rain from entering.

A blow-out this afternoon caused the loss of a good pullet, one of the best, too. Always is.

April 11 — Usually I discontinue the lights about the first of "Apral," as the natives say. But this month, we have had so much dark, gloomy weather, it seems advisable to let them run for a while longer. Some of these days the sun is going to shine and we will be surprised at the length of the days.

But it is an ill wind that blows no one good luck. Ralph Sheppard, the inspector, told me today that egg quality was running a trifle higher than usual. He attributes it to the increased humidity. It seems that there is a correlation between humidity and interior egg quality if other factors are reasonably equal.

April 13 — Decarbonization of the asbestos wicks is a big name for knocking the soot off of them. Each year, I replace all of the wicks in six of the brooder stoves. It costs only five cents a stove and that is rather cheap insurance. The other three stoves don't use wicks. Each type has its advantages, but I wouldn't turn my head either way. Really all it means is that there is a wick in one tin can and none in the other.

The old coal burners were made to hold heat even after the fire went out, but these stream-lined models are as cold as a door nail as soon as something happens to the thermostat. Just let a small foreign particle clog the thermostat and like the automobiles of old, one gets out and gets under.

April 17—Here it is Monday again and more rain. This in itself isn't so bad, but the weatherman says we are going to have rain all week. So far, this month we have had plenty of rain, more than the average. I am getting on pins and needles to a fare-ye-well. The work is getting ahead of us and it is going to be hard to get ahead of it. About the only thing I can do is to keep all of the regular work up to date. Then when the weather breaks away, we will be able to step on it. The lamps in the heated fountains are still running. It isn't cold enough to freeze the water, but the air is raw enough to cause the birds to relish their water warm.

April 18—Rained all morning, but broke away this afternoon. Right then is when I high-balled the eggs to town. I high-balled home too, for I had on a load of feed including two bags of beet pulp for the cows. Just as I pulled in the garage doors, the cloud burst started. If the beet pulp had gotten wet, it would have swelled up all over the ranch. I really don't know how big a pile 200 pounds of beet pulp would make after it was wet, but it would have been a stem winder, without a doubt.

April 20 — One week from today and chick brooding will be in full swing. A card from Walter Buss says he will deliver 1,500 chicks the 24th. That will be Monday, so I suppose the second hatch of the week will be Thursday with 3,000 more responsibilities.

It is a one-crop proposition, a live or die proposition, as far as I am concerned. And it is needless to say that I am usually concerned to the Nth degree. Rainy weather is still holding us up with the preparation of the brooder houses, but I think we will be in good shape by that time. All the dropping boards were cleaned today, so if tomorrow and Saturday are clear days, we will be able to make time. I don't like to get in a pinch with the work.

April 21—Well, the sun is shining for about the first day this month. There is still plenty of mud and water under foot, but Fred managed to reglaze a few of the brooder house sash. All of the sash are now in good shape, that is for the fix they are in.

The No. 5 brooder house has sprung several leaks in the roof. I brought out two rolls of roofing from town on the return load. It just won't do to have a leaky roof over chicks. Tomorrow Fred and I will lay the new roof over the old. I also brought a new sheathing board to replace the decayed one. The board on the lower side of a roof which projects over the facial or verge board on the end of the rafters should project over far enough so water doesn't run under the lower side and cause decay. This was my weakness 12 years ago. Today, I am paying for that mistake by having to replace it.

April 22 — The roof has been repaired and guaranteed not to leak. By way of comment, I might add that I am as stiff and sore as an old horse. My knees are so sore I can hardly walk and if I were to bend over, I don't know if I could straighten up again or not. I drove nails standing up, lying down and on bended knees. I should get a no stoop, no squat, no squint hammer. I am getting to be an old man and no one knows it any better than I do.

April 24 — The three bended-bow rafter brooder houses were as warm as toast when Walter Buss brought the chicks out this afternoon. Everything was hunky-dory. The peat litter has been covered with old newspapers, the mason jar fountains were filled and the hardware cloth chick guards were in place. All we had to do was to take the chicks out of the boxes and feed them. And did they eat? Hatched last night and this morning and went to bed tonight with a full crop.

I am old fashioned, belong to the old school so to speak, but I still brood with a thermometer. Of course, I watch the chicks too, but I keep an eagle eye on the thermometer. This gives me a check and a double check.

April 25 — It is very difficult to teach an old dog new tricks. I realized this last night when I went out to look at the chicks. Just couldn't help it, force of habit I guess, but I slept on the floor with the chicks. I curled up around the wire guard and we all slept the sleep of new born babes. Everything was lovely until one of them started howling like a lost soul crying out in the wilderness. This in itself wouldn't have been so bad, but it happened that he was only about an inch from my ear on his side of the fence. I was wide awake in less time than it takes to tell about it. Reaching over the fence, I put my hand on it. He responded with contented little chuckles and we all went back to sleep again.

April 26—Didn't lose a chick last night and that is something worthwhile crowing about for me. I have often heard about that kind of brooding, but whenever I can do it history is made on the ranch. But I know I am going to lose some, always do, and I can't see why this year should be any exception to the rule.

April 27 — The remaining brooder houses are now ready for chicks. This This morning we removed the wire guards and mason jar fountains from the bended bow rafter houses and installed them in the other houses. The fountains were filled and the stoves fired. Six matches to light six oil burning brooder stoves, and that is a record. The thermostats have been adjusted.

Walter Buss phoned a little while ago saying he would be out about 8:30 in the morning. It is raining now — just my luck. But it usually does rain the day the chicks come, so it is taken as a matter of course. This is the 31st year I have brooded chicks, and in that length of time one becomes hardened to about everything.

April 28 — "I'll be out in 30 minutes," phoned Walter Buss this morning. And so we manned all the help and stood by. He would drive along side a house and unload five boxes of chicks. One of us would start immediately to distribute them around the stove. When he had finished, the empty boxes were being brought forward for reloading. It all went like clock work; system, organization, these are the pass words. Within 30 minutes all the chicks were fed and the war is now on like nobody's business. It seems like old times out here in the woods brooding chicks. Just as natural as to expect the day to follow the night. And it is ideal weather for brooding chicks, too. Calm, clear, cool nights, out here in the woods brooding chicks by the pale moon light.

April 29—Brooding chicks by the pale moon light is right. Here I was, up and ahead of the schedule, sitting Jake, so to speak, when in comes a visitor. I don't know what I would have done if it hadn't been for the moon. After a hurried supper, I came out again to finish my work. Filled the fountains, filled the cardboard chick feeders, filled the oil tanks. Then it was 9:30 and I was too tired to go to the house and pack eggs. Didn't even go to the bunk house, but set the buckets down and the little dog, Mabel, and I went in a brooder house and flopped. Just flopped down on the floor with the chicks and slept. And I slept with a clear conscience of a day's work, a week's work and a month's work well done.

L. HORROX, of Leeds, England, is the possessor of a hen's egg that is more than 38 years old. Immediately after laying, the egg was boiled, dyed purple, and afterwards engraved to commemorate the Coronation of King Edward VII.
—Poultry World, London, England, March 22, 1940.

WHEN the census enumerators made their rounds in the crowded downtown districts of New York City, mothers with children on their laps sat in kitchen chairs, watched stoves and answered questions simultaneously. One Grand Street youngster, of three and one-half years, according to the New York Times, toddled up with a box containing three baby chicks.

"Ya gonna count these, too, Mister?" he wanted to know.

G. T. BERRY, of Richmond, Va., was ordered by police court to eat more chicken. The ruling arose out of a complaint by a neighbor who said Berry's chickens made more noise than he could bear. Berry explained he had bought an entire coop of chickens before Christmas and was killing and eating the birds at the rate of one a week. The court said Berry would have to step up his consumption and tone down the squawks.
—Newspaper Article.

WARTIME rationing sharply curtailed Germany's Easter egg supply, according to newspaper reports. Germans had some Easter eggs, but not so many of them. Nor did they appear in so many colors as formerly, because Germany has far more important uses for its dyes. Onion skins and other humble substances were used to lend a bit of color to the eggs. The March egg quota was seven eggs for each German, but it was reported that a person needed a little luck to get that allowance, as in many instances the neighborhood grocer did not have that many eggs.

Turkey Raisers Plan Increase

Report of the Agricultural Marketing Service. Released March 2, 1940

TURKEY producers are apparently planning to raise between 4 and 5 per cent more turkeys in 1940 than in 1939, according to February 1 returns to the Agricultural Marketing Service from 4,550 growers. They indicate the intention to obtain about 1 per cent fewer poults than last year from commercial hatcheries, but to increase home-hatchings about 9 per cent. Growers reported 7 per cent more turkey hens on hand than on February 1, 1939.

At this time last year growers reported an increase of 15 per cent in the number of turkey hens then on their farms, and an intention to raise 27 per cent more turkeys than in the previous year. The actual increase in the number of turkeys raised last year, however, was a few per cent less than intended. The increase might have been fully up to expectations if growers had been able to obtain as many turkey poults as they originally planned to purchase, but a moderate shortage of eggs and poults developed. While the percentage increase in turkey hens on hand February 1 this year was slightly greater than the intended increase in turkeys to be raised, the less active interest displayed thus far this season in early eggs and poults makes it doubtful if the available eggs will be as closely utilized as last year. In that case, the indicated increase of 5 per cent in poults is probably a maxiuum.

Regional Indications

The intended increase in all poults is 11 per cent in both the East North Central and South Central States. Increases of 6 per cent in the North Atlantic States and 5 per cent in the West North Central group are expected. In the South Atlantic States numbers are likely to be about the same as last year and in the Far Western States a decrease of 3 per cent is indicated.

For poults to be bought or custom hatched, intended increases of about 2 per cent in the West North Central States and of 4 per cent in the South Central group partly offset decreases of 2 per cent in the Far West and losses of from 5 to 8 per cent in other areas.

Intended home hatchings show the greatest increase in the East North Central States, with a gain of 25 per cent above last year. The increase is 14 per cent for the North Atlantic and 13 per cent for the South Central area, 9 per cent in the West North Central region, and 2 per cent in the South Atlantic.

The Far Western States show a decrease of 6 per cent from last year in the intended production of home hatched poults.

The shift this year toward more home hatched poults is in contrast to the situation last year, when the intended increase in hatchery poults was 34 per cent and in home hatched poults 22 per cent. It also runs contrary to the pronounced trends shown for many years past toward an increasing proportion of hatchery poults. The shift this year toward home hatched poults is observed mostly in the returns for large flocks, for the small flock producers apparently are continuing the shift toward an increasing proportion of hatchery birds.

The increase in the number of turkey hens on hand was greatest, 19 per cent, in the East North Central States. In the Far Western States increases and decreases balanced. Other areas show increases ranging from 8 per cent in the South Central States up to 13 per cent in the North Atlantic area.

Turkeys Pay for Education

Bonnie and Ruth Nutter of the Nuttersville Boosters 4-H club, Greenbrier county, W. Va., believe in making their projects pay for their education. They are attending high school at Rupert this winter on the income from turkeys they faithfully watched from sunrise to sunset on hillsides, in the valley and through the fields every day last summer.

Ninety-one turkeys were hatched from 107 eggs. Feed cost $60.00. The Nutter family dressed the turkeys, packed them in barrels with salt, and shipped them to a market in Philadelphia. The girls earned $204.00 as a result of their efforts. Ruth started at the age of six to watch turkeys in order that she could have money for her education.

—West Virginia 4-H Suggestions.

¶ THE LARGEST cooperative shipment of live turkeys and capons ever to go to the eastern market was made by 1,034 Tennessee farmers who shipped 19 cars to New York for the early Thanksgiving trade.

—News for Farmer Cooperatives, Feb., 1940.

¶ IN ORDER to produce cleaner eggs in wet weather, Lynn Bramkamp uses a deep layer of rice hulls in the nests, according to Pacific Rural Press. He claims that this type of nesting material works very well.

Sun Porches for Turkeys

Reprinted from Norbest Turkey News

NO simple invention connected with turkey brooding equipment has saved so many thousands of turkeys or so many thousands of steps in recent years as the sun porch.

They used to tell us we should brood in colony brooder houses and move them around often to be sure the ground was clean. One year these houses might be in a convenient spot; the next it would require hundreds of extra steps to get to them. The sun porch, insuring an absolutely sanitary run on the outside of the brooder house, made possible a permanent brooder set-up and the labor saving centralized brooding system.

The principle of the sun porch is simple. All it consists of is a sanitary outside run to a brooder house. You can have a concrete floor laid outside the brooder house and by hosing it off every night, you will have a sun porch of sorts, though an expensive one that is not altogether satisfactory.

The simplest form of sun porch is to have a platform on the south side of the brooder house, the floor of which allows the droppings to fall through to the ground.

Types of Porch Floors

The floor of this sun porch may be made of different materials. Half-inch hardware cloth, with square mesh, is very commonly used and is quite satisfactory, although some turkeys are lost through getting their hocks caught in the meshes. Aside from injury to some turkeys, the chief objection to this material is that a rigid frame for the floor is essential and eventually the wire will stretch and sag, no matter how carefully it is built. Such a floor cleans easily and on the whole is satisfactory.

Several other forms of wire floors are now being manufactured for this particular purpose, and most of them appear to be given fair satisfaction. Common one-inch mesh chicken wire is sometimes used, but has not proven too satisfactory as it is too light gauge for the purpose, and for small turkeys, the mesh is a trifle large.

The use of common plaster lath for the floors of sun porches is becoming increasingly popular. Where 250 turkeys are kept in a unit, a sun porch 8 feet by 12 feet is adequate, provided the floor of the brooder unit inside is about 10 feet by 20 feet. An 8-foot sun porch allows for using two 4-foot lath in its construction, or where the sun porches are taken down in winter and stored away, many growers make them in sections 4 feet by 12 feet, using two sections to the porch. The laths are placed three-quarter inch apart for the sun porch for brooding turkeys and are painted with two or three coats of ordinary old crankcase oil. This oil is applied long enough ahead to permit the porches to dry well before the turkeys go on them. The traffic of the turkeys over the lath keeps them remarkably clean and as a rule a light scrubbing and another coat of oil between breeds is all the cleaning necessary.

Northwestern Turkey Growers Assn., Salt Lake City, Utah
(Norbest Turkey News, March 1940)

These lath floors have the advantage of easy construction, durability, and low cost. Where full width laths are used, a 1 by 4-inch board supporting the laths in the middle is all the extra support needed. In some places where power saws are handy, the laths are sawed through the center and seem to clean better, but additional support underneath is required. In some localities, where the sun porches are permanent improvements, 1-inch by 1-inch boards are used in place of laths.

Height Above Ground

The distance of the floor of the sun porch above the ground does not matter, so long as it is high enough that accumulated manure does not come close to it, as is often the case when the sun porch consists of simply a platform laid on the ground.

The sides of the sun porch should be made of lath, running up and down, and nailed on one and one-quarter inches apart. Troughs for feed and water can be placed against these laths and, thus, after the birds get around three weeks old, all the feeding and watering can be done on the outside of the pens.

The height of these side walls is a matter of taste of the individual making them, but they should not be less than 2 feet. Two-inch mesh chicken wire makes a good top and keeps the poults where they belong. Some producers build the sides high enough that the poults cannot fly over and have no tops, but we have known instances where cats killed many poults in such places.

A sun porch does not cost much money. It takes your birds into the open air, insures a reasonable degree of sanitation and saves hours and hours of clean-up labor. Therein lies its chief advantage. One can keep almost any type of a pen clean, but it takes work to do it. The sun porch avoids this work, keeps the birds healthy, contented and happy.

PERCHED on a stand in the center of the busiest intersection in Albany, Oregon, according to Farm Journal and Farmer's Wife for March 1940, is a huge replica of a Bronze gobbler, tribute to an industry that started with a few thousand birds 16 years ago and shipped out 210,000 last year. They brought their owners $652,000. Beneath the replica is the following: "I am 'King Oscar'—Lord of the Largest Turkey Shipping Point in the World—Albany, Oregon."

VIEWS OF THE EDITORS

Planning Poultry's Future

The final report of the Seventh World's Poultry Congress has just been released and with it an announcement of the tentative recommendations of the Planning Committee of the Poultry and Egg Industry.

There have been few farm shows in this country to equal Cleveland's Poultry Congress last August. It was planned with foresight, well publicized, sagely financed; and all by the industry itself. The result was a merited success, popularly, educationally and scientifically. The attendance exceeded 850,000 over the eleven-day period. Thirty-eight countries were officially represented. Twenty-nine States had special exhibits. There were 247 individual exhibits by commercial concerns. Receipts were $313,737.95, expenses $309,970.74 (including $20,000 paid to the International Baby Chick Association and $5,000 to Northeastern Poultry Producers' Council); leaving a net profit of $3,767.21. To "Jimmy" Rice, of Mexico, N. Y., who acted as chairman, and to Glenn Campbell, of Cleveland, O., business manager, must go a large portion of the credit for this worthwhile enterprise.

The Planning Committee has recommended the establishment of a National Board, representative of all branches of the poultry industry. It is proposed that this Board shall work to coordinate the activities of the many sectional groups, so that all may benefit from the work of each. Its goal is to formulate a permanent promotional campaign for the better knowledge and greater use of all poultry and egg products, by means of demonstrations, merchandising tie-ups, tested laboratory recipes, sales promotion, establishing cooking schools, and preparation of varied forms of constructive publicity.

This is a sound, well-balanced program. Above all, it marks a spirit of cooperation within the industry itself, free of any governmental crutch or hand-out. Judged on its present performance, the poultry industry is setting a standard that others would do well to strive to attain.

—Rural New Yorker, Mar. 9, 1940.

Good Chicks Lower Costs

Too many people, when we talk about producing poultry and eggs at a lower cost, immediately decide that the only way to do it is to start out with cheaper chicks and give them cheaper feed. But it has never been done that way yet.

Figure out for yourself how many

extra eggs you'd have to get from a pullet next fall to pay the difference in cost between an ordinary chick and a really good one. It was a poultry raiser himself who pointed out to me that if he could get just 2 extra eggs from a pullet at the time when they were worth 30 cents a dozen, he could afford to pay as much as 2½ cents apiece more for his chicks.

And when it comes to feed, records kept on over half a million broilers showed that the most expensive feed used produced birds costing 1.2 cents less than the average.

If you want to produce poultry and eggs at the lowest possible cost, steer clear of "bargains" in chicks. Get good chicks and give them good feed.

—Excerpt from Frank Priebe's Weekly Letter, Mar. 23, 1940.

It Works!

Some folks probably figure that all this fuss about Egg Weeks and Spring Festivals is so much propaganda for somebody.

As proof that it gets right down to the final consumer and causes more eggs to be eaten, here's one example.

In New York recently, we sat at a lunch counter in a chain drug store. We noticed an attractive display, in the background, of two baskets of eggs, hen and chicks, flanked by two Easter rabbits and the lighted words —"Add an Egg."

Soon another customer came in and asked for a fountain drink. "Add an egg?" asked the energetic clerk. And he made the sale.

Here was the Spring Egg Festival in actual operation—where it would do the most good. I was curious, so I asked the manager whether it made any difference in sales. His reply was enthusiastic. "Yes indeed! Last week I sold 40 dozen more eggs than usual." I did some quick mental arithmetic. If there were 1000 such drug stores in the New York district (and that would probably be a low estimate) that would mean at least 1300 extra cases per week in one large market alone.

Add to that, many other large cities and the efforts of the grocery chains and independent stores, and you have a tremendous push for sales.

Get behind the merchants, drug stores and others who are pushing for a successful second Egg Week in April, starting the 11th. See your newspaper and give them the facts.

—Poultry Item, April, 1940.

☛ ONE READER used fried eggs as bookmarks, according to the Cheyenne, Wyoming, public library.

—Carl H. Schroeder, Poultry Tribune, April, 1940.

POULTRY STATISTICS

Hens on Farms — Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	Feb. 1	Mar. 1	Feb. 1	Mar. 1	Aggregate Jan.-Mar.	Feb. 1	Mar. 1	Aggregate Jan.-Mar.
North Atl.									
1929-38 (Av.)	96.9	94.9	93.0	33.0	41.8	101	31.2	38.9	95
1939	98.4	96.5	94.2	38.0	48.2	119	36.4	45.4	114
1940	97.2	94.8	92.9	35.2	47.4	117	33.3	43.9	110
S. N. Cent.									
1929-38 (Av.)	108.8	107.7	104.5	26.4	37.1	83	28.6	38.9	89
1939	107.3	106.7	103.4	32.1	41.3	100	34.6	43.0	108
1940	110.8	109.3	107.2	25.8	40.9	95	28.6	44.1	105
W. N. Cent									
1929-38 (Av.)	118.8	118.3	114.0	20.9	33.5	69	24.9	38.5	81
1939	113.1	113.2	110.2	28.7	35.2	85	32.6	39.0	96
1940	118.6	116.9	119.0	18.9	35.7	78	22.3	42.8	93
South Atl.									
1929-38 (Av.)	58.9	57.6	56.2	29.3	41.9	92	17.0	23.6	53
1939	59.9	57.7	56.2	32.7	47.5	106	19.1	26.4	61
1940	59.9	58.8	58.4	25.3	44.7	98	14.6	26.1	57
South Cent.									
1929-38 (Av.)	65.0	64.4	62.2	26.2	41.3	85	16.9	25.7	54
1939	63.6	63.4	61.6	30.2	43.7	96	19.1	27.0	60
1940	65.8	64.0	63.3	18.8	39.5	81	12.1	24.8	52
Western									
1929-38 (Av.)	73.2	72.7	70.9	30.2	44.3	98	21.3	30.6	68
1939	72.6	71.1	69.0	37.5	44.6	109	26.0	29.6	75
1940	73.7	71.6	69.1	32.1	48.0	110	21.6	32.0	75
United States									
1929-38 (Av.)	84.5	83.6	81.0	26.0	38.4	83	21.8	31.3	69
1939	82.8	82.0	79.8	31.9	41.4	98	26.0	33.3	80
1940	85.1	83.5	82.9	23.9	40.7	91	19.4	33.5	75

Reports from crop correspondents show that layers in farm flocks have largely recovered from the severe winter weather of January which brought the rate of February 1 egg production per hen down to 25 per cent below that in 1939, and held the rate per hen for the entire month of February almost 8 per cent below the February rate in 1939.

By March 1 the reported rate of egg production per 100 layers was only slightly below the average of the high March 1 levels of the past three years and was 6 per cent higher than the 10-year (1929-38) average rate for March 1. The regional production of eggs per layer was lower than on March 1 last year in all groups of states, except in the West North Central group where there was a slight gain, and in the Far West where the gain was pronounced. Compared with the 10-year average production per layer, every major geographic area but one showed pronounced increases, ranging

from 6 per cent to 13 per cent. The South Central area was 4 per cent lower than average.

The seasonal decrease in number of layers during February was considerably less than last year, so that numbers have more than regained the lead lost during January, and on March 1 were almost 4 per cent above numbers last year. This gain over numbers last year was probably due to an unusually large number of late pullets coming into laying during February. All geographic areas except two showed gains in numbers of layers per farm flock on March this year over both last year and the 10-year average. The North Atlantic States showed a slight decrease below numbers of last year; and in the Far West, numbers were 3 per cent lower than the 10-year average.

Indicated egg production per farm flock on March 1 was a little greater than last year because the increase in layers was slightly greater than the loss in rate of production per layer. Indicated total egg production on March 1 was greater than last year in the North Central and Far Western areas but less in the North Atlantic and the Southern States. Compared with the 10-year March 1 average, total indicated production for the United States was 7 per cent greater, and production was greater in every major geographic area except the South Central where it was 4 per cent below average.

—Comment from Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Unusually heavy buying of eggs by the Federal Surplus Commodities Corporation for relief distribution constituted a major feature of March egg markets, the Agricultural Marketing Service reports. Though current-season buying operations of that agency were started in December, most of the purchases have been made during the past 30 days. Total purchases from the time buying began in December up to March 30 were 372,000 cases, of which slightly more than 320,000 cases were bought during the 5 weeks ending on the latter date. The heaviest purchases ever made in a single week occurred during the period March 25 to 30, inclusive, totaling approximately 102,000 cases. Though the Federal Surplus Commodities Corporation operations, through authorized agents on the New York and Chicago Mercantile Exchanges, accounted for most of the purchases (approximately 285,000 cases), sizable quantities have been bought by sellers making offerings at stated prices. Approximate quantities bought in this

Receipts of Eggs (Cases) at 4 Markets*

Geographic sections	February 1940	February 1939	% change	Jan. to Feb., Inc. 1940	Jan. to Feb., Inc. 1939	% change
New England	44,257	34,323	+ 28.9	99,082	75,927	+ 30.5
Middle Atlantic	162,870	165,810	– 1.8	337,003	330,963	+ 1.8
South Atlantic	17,752	22,282	– 20.3	31,340	41,304	– 24.1
East North Central	188,621	172,545	+ 9.3	387,938	391,732	– 1.0
West North Central	412,780	484,015	– 14.7	747,164	932,561	– 19.9
South Central	17,476	3,227	+441.6	17,984	7,910	+127.4
Mountain	31,922	18,435	+ 73.2	67,697	56,735	+ 19.3
Pacific	62,977	19,313	+226.1	129,005	55,487	+132.5
Miscellaneous	322	382	– 15.7	619	677	– 8.6
TOTAL	938,977	920,332	+ 2.0	1,817,832	1,893,296	– 4.0

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic sections	February 1940	February 1939	% change	Jan. to Feb., Inc. 1940	Jan. to Feb., Inc. 1939	% change
New England	323,406	333,502	– 3.0	965,315	604,183	+ 59.8
Middle Atlantic	1,267,915	774,679	+ 63.7	2,529,061	1,458,742	+ 73.4
South Atlantic	2,054,200	1,163,611	+ 76.5	4,157,320	2,084,878	+ 99.4
East North Central	2,858,432	2,804,776	+ 1.9	5,682,120	6,455,932	– 12.0
West North Central	11,106,108	7,740,056	+ 43.5	29,569,034	20,385,225	+ 45.1
South Central	1,442,097	1,934,208	– 25.4	3,059,179	4,213,905	– 27.4
Mountain	662,322	486,221	+ 36.2	2,239,653	1,333,593	+ 67.9
Pacific	1,886,061	630,161	+199.3	5,217,619	1,320,476	+295.1
Miscellaneous	0	0	–	0	0	–
TOTAL	21,600,541	15,867,214	+ 36.1	53,419,301	37,856,934	+ 41.1

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
March 2	29	37,832	+2.13	+13.99
March 9	25	35,695	–1.13	+13.23
March 16	27	33,772	+1.07	+14.38
March 23	26	34,701	–0.87	+14.00
March 30	25	32,773	–5.95	+ 9.67

manner up to March 30 included approximately 42,000 cases on the Pacific Coast, 4,000 cases in the Southwest, 14,000 cases in the Mid-west, and 27,000 cases in the Northeast. These eggs have been moved into relief distribution as promptly as possible, although at the close of March, some 59,000 cases belonging to relief agencies were in cold storages at New York and Chicago. None were reported held at other markets.

Receipts of eggs at Eastern terminal markets in February were only 2 per cent larger than a year earlier, but after March 1 increased rapidly, showing an increase over the comparable period in 1939 in excess of 10 per cent. In view of an estimated 4 per cent reduction in farm production during February, and consistent reductions under last year in receipts at Central Western packing plants, it appears that a larger than usual proportion of eggs moved to terminal markets this month. Apparently, immediate outlets at New York and Chicago, particularly under Federal Surplus Commodities Corporation buying, and prices obtainable, appeared relatively more favorable than assuming the risk of storing. An earlier

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
March 2	59	72,991	68,544	+ 4.41	+ 6.49
March 9	59	80,523	66,948	+10.32	+20.28
March 16	60	80,224	66,481	– 0.92	+20.67
March 23	60	81,397	69,716	+ 1.46	+16.75
March 30	59	80,129	70,580	– 1.53	+13.53

Easter this year may also have had some effect. On the Pacific Coast, packing plant receipts have continued to exceed comparable periods of a year earlier since last fall, and have generally shown seasonal increases.

—Comment from Monthly Egg and Poultry Markets Review.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	% Chg.	Pounds of Poultry (000 omitted) 1940	1939	% Chg.	Pounds of Young Stock (000 omitted) 1940	1939	% Chg.	Pounds of Fowl (000 omitted) 1940	1939	% Chg.
March 2	90,123	114,853	–21.53	1,685	1,561	+ 7.93	Discontinued until quantities available are larger.			1,434	1,377	+ 4.12
March 9	112,851	142,636	–20.88	2,104	1,605	+31.10				1,857	1,384	+34.19
March 16	167,693	189,666	–11.59	2,174	1,712	+26.99				1,915	1,530	+25.09
March 23	202,276	235,535	–14.12	2,251	1,611	+39.73				1,986	1,412	+40.62
March 30	211,153	255,696	–17.42	1,925	1,619	+18.86				1,695	1,411	+20.11

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	Avg. Egg Price per Doz. (Dollars) 1940	1939	1938	Avg. Feed Cost per 100 lbs. (Dollars) 1940	1939	1938
March 7	9.9	8.5	8.9	.194	.196	.200	1.92	1.67	1.78
March 14	10.0	8.3	8.9	.191	.201	.202	1.91	1.66	1.79
March 21	10.0	8.3	8.4	.192	.203	.214	1.92	1.68	1.79
March 28	10.0	8.8	8.6	.192	.191	.206	1.92	1.68	1.77

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration 1940	1939	10-yr. Avg. 1930-39	Price of Fresh Graded Firsts (Dollars) 1940	1939	Cost of Ration per 100 lbs. (Dollars) 1940	1939
March 2	6.98	6.38	6.16	.280	.160	1.257	1.023
March 9	7.56	6.19	6.26	.165	.165	1.248	1.026
March 16	7.37	6.05	6.37	.166	.167	1.225	1.014
March 23	7.51	6.28	6.43	.164	.162	1.236	1.021
March 30	7.59	6.35	6.60	.165	.162	1.253	1.032

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	1937	1936	1935
February	9.60	7.55	9.05	10.20	7.49	7.41
January-February	9.47	6.94	8.00	8.96	6.98	7.01
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

1940 Egg Prices at New York City

Kind	Mar. 1	Mar. 8	Mar. 15	Mar. 22	Mar. 29	Mar. 29, '39
Mixed Color Firsts	19½	17¾	18	17¾	17½	17¼-17½
Nearby and Midwestern White Premium Marks	22½-24	21¼-22¾	21¼-22¾	21-22½	20½-22	22-23
Nearby and Midwestern White Specials	22	20¾	20¾	20½	20	21
Pacific Coast Specials	23½-24½	23-25½	22¾-25½	24½-25½	23½-25½	27¼-27¾
Nearby and Western Brown Exchange Specials	22	20¾	20¾	20½	20	19½

Farm Prices of Eggs per Dozen

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Aug. 15	Oct. 15	Dec. 15
			(Figures given in cents)						
Average 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	19.9	26.2	28.8
1938	21.6	16.4	16.2	15.9	17.6	18.2	21.0	27.1	27.9
1939	18.8	16.7	16.0	15.5	15.2	14.9	17.5	22.9	20.5
1940	18.3	20.2	15.4						

Poultry Meat Prices

Farm Prices of Chickens per Pound

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Aug. 15	Oct. 15	Dec. 15
			(Figures given in cents)						
Average 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	14.9	14.6	13.6
1938	16.7	16.0	15.9	16.2	16.1	15.7	14.2	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.0	12.7	11.7
1940	12.0	12.2	12.8						

Eggs in Storage

Storage Holdings of Eggs

Kind	Mar. 1 5-Year Avg. 1935-39	Mar. 1 1939	Feb. 1 1940	Mar. 1 1940	% Change Mar. '39-Mar. '40
		(Thousands)			
Shell Eggs (cases)	163	165	57	81	–50.9
Frozen Eggs (lbs.)	50,680	44,476	56,249	37,474	–15.7
Frozen Case Equivalent (cases)*	1,448	1,271	1,607	1,071	–15.7
Total (cases)	1,611	1,436	1,664	1,152	–19.7

* Frozen eggs are converted on the basis of 35 lbs. to the case.

Stocks of eggs—both shell and frozen meats—totaled the equivalent of 1,152,000 cases. This quantity compares with a case equivalent of 1,436,000 for March 1, 1939, and 1,611,000 average.

Stocks of shell eggs had about reached the vanishing point and the total case equivalent of shell eggs and frozen egg meats combined were 284,000 cases less than those on hand a year earlier and 459,000 cases less than average for March 1.

—Comment from Cold Storage Report.

Poultry in Storage

Storage Holdings of Poultry

Kind	Mar. 1 5-Year Avg. 1935-39	Mar. 1 1939	Feb. 1 1940	Mar. 1 1940	% Change Mar. '39-Mar. '40
		(Thousand Pounds)			
Broilers	12,282	9,289	10,195	8,743	– 5.0
Fryers	11,588	11,635	8,570	6,694	– 42.4
Roasters	25,734	26,718	26,810	21,312	– 20.2
Fowls	18,477	18,391	24,532	20,337	+ 10.5
Turkeys	26,271	26,958	65,467	63,756	+136.5
Ducks	2,166	2,991	4,256	2,675	– 10.5
Miscellaneous	16,913	20,247	17,429	14,121	– 30.2
Unclassified			9,703	7,105	
Total	113,431	116,229	166,962	144,743	+ 24.5

Total frozen poultry stocks on March 1 were 144,743,000 pounds, which indicates net withdrawals during February of 22,219,000 pounds. The out-of-storage movement was somewhat above average, which was 17,181,000 pounds. The heaviest poultry item was turkeys, with stocks of 63,756,000 on March 1 compared with 26,958,000 pounds a year earlier and 26,271,000 for average.

—Comment from Cold Storage Report.

Hatchery Operations

The final summary of the hatchery reports for February indicates that 40 per cent fewer chicks were hatched during February than a year earlier. According to the Agricultural Marketing Service, reports from 535 hatcheries with a capacity of 56,535,000 eggs showed hatchings of 6,908,000 chicks, compared with 11,451,000 chicks hatched by the same plants in February last year and the same plants reported 23,715,000 eggs set during February, compared with 27,180,000 a year earlier—a decrease of 13 per cent.

Decreases from last February in eggs set and chicks hatched were reported for all sections of the country although smaller declines were noted in New England. Hatchings were substantially smaller in the major

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During February			Salable Chicks Hatched During February			Chicks booked Mar. 1 for Mar. or later delivery			
		1940	1939	% chg.	1940	1939	% chg.	No. of Plants	1940	1939	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	20	1,666	1,687	– 1	759	908	–16	16	1,591	1,930	–18
Mid. Atl.	49	2,411	2,497	– 3	737	1,093	–33	49	2,378	2,134	+11
S. Atl.	40	1,731	2,029	–15	723	1,121	–36	26	1,052	1,129	– 7
E. N. Cent.	152	4,948	5,251	– 6	1,094	1,799	–39	130	3,293	3,486	– 6
W. N. Cent.	147	5,815	6,682	–13	952	2,241	–58	141	5,759	5,600	+ 3
S. Cent.	50	2,000	2,683	–25	575	1,258	–54	27	691	838	–18
Mountain	21	500	535	– 7	132	197	–33	17	249	372	–33
Pacific	56	4,644	5,816	–20	1,936	2,834	–32	54	4,448	6,646	–33
U. S.	535	23,715	27,180	–13	6,908	11,451	–40	460	19,461	22,135	–12
Jan.-Feb. Inc.		32,641	41,187	–21	11,111	17,515	–37		36,643	41,313	–21

poultry producing areas, with the East North Central States showing a drop of 39 per cent, the West North Central States 58 per cent, and the South Central States 54 per cent. The decrease of only 13 per cent in the number of eggs set, however, indicates that the effect of cold weather on hatchery egg production was somewhat alleviated during the latter part of February.

Production of baby chicks in March, however, is not expected to be as large as last year. The rapid increase in egg receipts during the past several weeks with lower egg prices, has caused the feed-egg ratio again to become unfavorable for egg production. As a result, hatcherymen are holding their operations closely to chicks booked for later delivery. Bookings on March 1 were 12 per cent below those on the same date last year with only two sections of the country reporting more orders on hand than on March 1 last year. The Middle Atlantic States reported 11 per cent more chicks booked for March 1 delivery or later, and the West North Central States reported 3 per cent more.

No unusual surplus of baby chicks was reported during February. Reports from a group of plants covering the distribution of 7,073,000 chicks hatched during February indicated that 86 per cent were sold and delivered, 3 per cent were custom hatched, 3 per cent were destroyed as sexed cockerels, and 8 per cent were brooded for later sale, or were unsold at the end of the month. Last year 88 per cent of the February production was sold and delivered, 2 per cent custom hatched, 2 per cent destroyed as sexed cockerels and 8 per cent distributed by other methods, brooded or unsold at the end of the month.

The decline in the number of chicks sexed in February compared with a year earlier was not quite as pronounced as the decrease in the total number hatched. Reports from 130 plants this year indicated that the number of chicks sexed was 22 per cent less than the number sexed last year, due to lighter hatchings, but that the number sexed this year constituted 42 per cent of the total February production of the reporting plants compared with 36 per cent last year.

Reports from 360 plants covering the production of 6,170,000 chicks in February indicated that approximately 43 per cent of these were classified as "light breeds" and 57 per cent were classed as "heavy breeds." In February last year, 42 per cent were classified as light breeds and 58 per cent as heavy breeds which suggests no significant change.

Commercial hatchings of turkey poults continue to be under those of last year. Reports from 58 plants hatching poults indicated that hatchings were 22 per cent less than those of February last year. The number of eggs set during February, however, was only 5 per cent less. This indicates that fairly liberal supplies of poults will be available for delivery March 1 or later. Sixty-four plants reported bookings on March 1 to be 26 per cent less than for the same date last year.

As pointed out in the Preliminary Hatchery Report for February, the significance of these figures as reflecting the future trend in commercial hatchings is modified to some extent by the March 2 prospective turkey crop report of the Agricultural Marketing Service. The report indicated that turkey producers planned to raise between 4 and 5 per cent more turkeys in 1940 than in 1939. It also indicated that producers would probably buy about 1 per cent fewer commercially hatched poults.

—Comment from Hatchery Report.

Egg Breaking Operations

Egg Breaking Operations During February, 1940

Commodity		Quantities reported to date for Feb. 1940	Same Firm Comparison		
			Feb. 1940	Feb. 1939	% change in 1940
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		444,043	443,199	1,925,564	–77
Mixed eggs (plain)		46,607	41,423	239,560	–83
Mixed eggs (emulsions, also with sugar, salt, etc.)		186,360	186,360	452,430	–59
Egg whites (all descriptions)		315,497	308,711	2,059,748	–85
Egg yolks packed	Without salt, sugar, etc.	82,779	82,119	746,296	–80
	With sugar	125,738	120,404	975,167	–88
	With salt	50,136	50,136	359,070	–86
	All yolk emulsions, including glycerine	1,620	1,620	65,980	–98
Total—pounds		1,252,780	1,233,972	6,823,815	–82
Total—case egg equivalent		35,794	35,256	194,966	
Number of firms reporting		33	32		

Poultry Canning Operations

Poultry Canning Operations During February, 1940

Commodity	Quantities reported to date for Feb. 1940	Quantities reported for Jan. 1940	Same Firm Comparison		
			Feb. 1940	Feb. 1939	% change in 1940
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	4,611,774	4,556,138	4,611,774	3,354,195	+37
Number of firms reporting	17	19	17		

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		February 1940	February 1939	Jan. to Feb., Inc. 1940	Jan. to Feb., Inc. 1939
Eggs in Shell	(doz.)	211,734	241,333	495,439	432,221
Eggs and Yolks, frozen, dried or canned	(lbs.)	21,461	Not available	29,015	Not available
Live Poultry	(lbs.)	11,697	8,660	19,614	16,543
Dressed Poultry	(lbs.)	88,941	168,899	216,327	293,118

Imports of Eggs and Poultry

Commodity		February 1940	February 1939	Jan. to Feb., Inc. 1940	Jan. to Feb., Inc. 1939
Eggs in Shell	(doz.)	16,751	24,176	33,122	73,799
Whole Eggs, dried	(lbs.)	9,500	11,000	14,500	17,000
Whole Eggs, frozen	(lbs.)	0	420	167	420
Yolks, dried	(lbs.)	174,864	7,400	227,664	36,175
Yolks, frozen	(lbs.)	0	11,190	0	11,190
Egg Albumen, dried	(lbs.)	20,600	56,200	58,200	128,992
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	63,868	43,628	101,204	117,548
Dressed Poultry	(lbs.)	17,932	33,824	30,186	48,585
Poultry, prepared	(lbs.)	65,125	117,219	123,400	234,640

Baled Straw Poultry House

Frank J. Cooper, Butler county, Pa., used four and one-half tons of baled straw, baled at a cost of $2.50 per ton, to build his 26 x 52 foot (outside measurement) poultry house with a capacity of 375 birds, in the fall of 1938. A galvanized roof and hardware cost $108. The rafters are stuffed with straw so that it is well insulated. The walls were built as soon as the balers had completed their jobs.

Two thousand feet of lumber was required by the rafters, sheathing, roosts and droppings boards. After two years of satisfactory housing, the house is still in good condition. Mr. Cooper is well pleased, and states that the house is warm and easy to ventilate.

—R. E. McDougall, Pennsylvania Farmer, Mar. 23, 1940.

New Names for Poultry Biologics

The new Food and Drug Act, which became effective on January 1, 1940, does not specifically cover biologics, but the Secretary of Agriculture has felt that it was for the best interest of the industry if the intent of the Food, Drug and Cosmetic Act was carried out in the biologics also. To attain that goal, a general circular letter was sent out by the Chief of the Bureau of Animal Industry asking manufacturers of bacterins and vaccines to rewrite their production methods and labels and submit their license for re-issue. As a result of this ruling, there will be greater uniformity in the names of the bacterins and vaccines, the methods of production will also be more uniform and as a result one can have greater confidence in the use and application of a better type of biologics.

A few changes in the names of bacterins and vaccines become effective as soon as these details have been arranged.

Old Names	New Names
Autogenous Bacterin	Autogenous Bacterin
Cholera-Typhoid Bacterin	Avisepticus-gallinarium Bacterin
Fowl Pox Vaccine (Chicken Strain)	Fowl Pox Vaccine (Chicken Origin)
Fowl Pox Vaccine (Chicken Strain) Egg Propagated	Fowl Pox Vaccine (Chick Embryo Origin)
Fowl Pox Vaccine (Pigeon Strain)	Pigeon Pox Vaccine (Pigeon Origin)
Fowl Pox Vaccine (Pigeon Strain) Egg Propagated	Pigeon Pox Vaccine (Chick Embryo Origin)
Infectious Laryngotracheitis Vaccine	Fowl Laryngotracheitis Vaccine (Chick Embryo Origin)
Mixed Bacterin Fowl	Mixed Bacterin (Avian) chicken formula
Mixed Bacterin for Turkeys	Mixed Bacterin (Avian) turkey formula
Mixed Bacterin for Rabbits	Mixed Bacterin (Rabbit) Formula 1
(New)	Gallinarum-typhimurium Bacterin—Turkey Formula to help stimulate immunity against Shigella gallinarum and Salmonella typhimuri infection commonly called typhoid and paratyphoid in turkeys and chickens.
(New)	Pasteurella Avicida Bacterin to help stimulate immunity against Pasteurella avicida infection commonly called fowl cholera, occurring in chickens, turkeys, geese, ducks, or pheasants.

—Dr. Salsbury's Poultry Health News, Jan.-Feb. 1940.

¶¶ OYSTERMEN near Ocean Park, Wash., saw a duck struggling in the water as the tide rose. They investigated, but too late. An oyster had closed its shell on the duck's foot and drowned the bird.

—Newspaper Article.

RESULTS OF LAYING TESTS

Averaging 131 eggs and 136 points per bird through the 152 days to March 1, Hanson's Leghorns at the Storrs Test are out in front of all other pens at all 16 standard tests. Blue ribbon holder in the Rhode Island Red breed is H. J. Hardin's entry at Georgia. Eben Wood's team at Storrs tops the New Hampshire breed, and Norman Amidon's Barred Rocks at Pennsylvania lead in their division. Pennant bearer in the White Rock section is Townsley Trapnest Farm's pen at Georgia. Taylor's Wyandottes at Texas are on top in their class.

Heaviest scoring pen during February was Crooks Farm's pen of Rhode Island Reds at Storrs. Highest hen to March 1 is E. B. Parmenter's Rhode Island Red at Rhode Island. She has turned out 150 eggs and earned 163.55 points.

Average production at all tests to March 1 is 83.3 eggs and 83.84 points, compared with 78.3 eggs and 78.21 points the same time last year. Mortality stands almost exactly the same. Highest ranking tests so far this year are Georgia, Storrs, Pennsylvania and Texas, in the order named.

Top-notch pen at the R. O. P. Progeny Test, Paterson, N. J., is Crooks Farm's Rhode Island Reds. Parmenter's Reds occupy second position. In third place come J. J. Warren's Reds, followed by W. B. Coles' White Leghorns and E. R. Rutter's White Rocks.

Number one pen at Vineland Hen Test this year is Hanson's Leghorns.

Twenty Highest Pens in All Breeds to March 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	1713	1768.05	Storrs
J. A. Hanson	White Leghorn	1698	1756.75	Storrs
H. J. Hardin	Rhode Island Red	1672	1750.80	Georgia
E. B. Parmenter	Rhode Island Red	1600	1731.15	Rhode Island
W. C. Mullins	Rhode Island Red	1612	1707.45	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	1703	1703.05	Passaic, N. J.
Eben Wood	New Hampshire	1569	1695.65	Storrs
Thomas Mettler	Rhode Island Red	1635	1687.05	Hunterdon, N. J.
R. E. & F. H. Kendrick	Rhode Island Red	1557	1661.35	Rhode Island
J. J. Warren	Rhode Island Red	1607	1660.55	Storrs
H. J. Hardin	Rhode Island Red	1585	1655.20	Georgia
E. B. Parmenter	Rhode Island Red	1545	1650.65	New York State
Ralph W. Anderson	Rhode Island Red	1604	1650.50	Storrs
E. B. Parmenter	Rhode Island Red	1567	1640.70	Storrs
Norman W. Amidon	Barred Rock	1619	1639.65	Pennsylvania
W. E. Pyles and Son	White Leghorn	1569	1638.70	Georgia
W. H. Wilson	Rhode Island Red	1695	1634.35	Georgia
To-Lani Farm	Rhode Island Red	1667	1626.95	Georgia
George M. Heberer	White Leghorn	1592	1626.50	Texas
George M. Heberer	White Leghorn	1556	1620.00	Texas

High Pen in Each Standard Test to March 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	1713	1768.05	Storrs
H. J. Hardin	Rhode Island Red	1672	1750.80	Georgia
E. B. Parmenter	Rhode Island Red	1600	1731.15	Rhode Island
W. C. Mullins	Rhode Island Red	1612	1707.45	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	1703	1703.05	Passaic, N. J.
Thomas Mettler	Rhode Island Red	1635	1687.05	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	1545	1650.65	New York State
Norman Amidon	Barred Rock	1619	1639.65	Pennsylvania
E. B. Parmenter	Rhode Island Red	1538	1593.50	Western New York
E. B. Parmenter	Rhode Island Red	1487	1558.40	Florida
Nelson's Leghorn Breed. Farm	White Leghorn	1518	1547.40	Oklahoma
E. B. Parmenter	Rhode Island Red	1434	1502.00	Maine
J. J. Warren	Rhode Island Red	1440	1495.65	Michigan
Missouri Valley Hatchery	Rhode Island Red	1321	1401.05	Missouri
Mishler-Liggett	Rhode Island Red	1373	1362.10	Arizona
Foreman Poultry Farm	White Leghorn	1310	1356.05	Central New York

High Pen in Each Standard Test for February

Owner	Breed	Eggs	Points	Test
Crooks Farm	Rhode Island Red	333	361.60	Storrs
J. J. Warren	Rhode Island Red	338	359.85	New York State
Thomas Mettler	Rhode Island Red	323	346.00	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	327	345.65	Pennsylvania
Glendale Poultry Farm	Rhode Island Red	310	338.90	Rhode Island
W. C. Eckard	White Leghorn	312	337.15	Michigan
Horseshoe Poultry Ranch	White Leghorn	313	333.20	Texas
Thomas Mettler	Rhode Island Red	313	332.70	Passaic, N. J.
To-Lani Farm	Rhode Island Red	321	324.05	Georgia
Missouri Valley Hatchery	Rhode Island Red	297	318.50	Missouri
Raymond P. Potter	Rhode Island Red	306	317.20	Maine
C. B. Davidsen	White Leghorn	297	314.50	Oklahoma
R. C. E. Wallace	Barred Rock	300	313.55	Florida
Victor H. Kirkup	Barred Rock	289	301.15	Central New York
Oak Knoll Poultry Farm	White Leghorn	293	299.90	Arizona
E. B. Parmenter	Rhode Island Red	276	296.20	Western New York

High Pen in Each Breed to March 1—(152 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	1713	1768.05	Storrs
H. J. Hardin	Rhode Island Red	1672	1750.80	Georgia
Eben Wood	New Hampshire	1569	1695.65	Storrs
Norman Amidon	Barred Rock	1619	1639.65	Pennsylvania
Townsley Trapnest Farm	White Rock	1481	1504.75	Georgia
Harvey E. Taylor	White Wyandotte	1468	1440.85	Texas
R. S. Thomas	Ancona	1329	1269.30	Pennsylvania
Laclede Hatchery	Black Australorp	1261	1231.55	Oklahoma
E. J. Covey	Black Minorca	1065	1088.95	Texas
Lindstrom Poultry Farm	Buff Minorca	1147	1066.75	Texas
T. D. Brown	White Minorca	982	1024.85	Texas
Famous Poultry Farms	Leghorn Cross	982	959.95	Georgia
Raymond Murphy	White Giant	865	902.50	Missouri
Harry Phillips	Columbian Rock	833	882.15	Missouri
Iowa Master Breeders	Buff Orpington	752	782.00	Missouri
C. A. Richardson	Buff Leghorn	732	687.80	New York State
Cedarlaid Poultry Farm	Brown Leghorn	741	626.55	Florida
S. E. Raymond	Lamona	533	545.35	Storrs
R. L. Jones	Light Brahma	422	448.75	Hunterdon, N. J.
Walter Dobe	Barnevelder	184	194.90	Western New York
Daniel S. Riker	Buff Rock	222	194.85	Maine

High Hen in Each Breed to March 1—(152 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	150	163.55	Rhode Island
J. A. Hanson	White Leghorn	150	157.05	Storrs
George A. Pearce	New Hampshire	142	151.70	Hunterdon, N. J.
Norman Amidon	Barred Rock	135	146.15	Pennsylvania
John Spangenberg	White Rock	136	146.05	Maine
T. D. Brown	White Minorca	134	145.60	Texas
Harvey E. Taylor	White Wyandotte	131	140.45	Texas
Famous Poultry Farms	Leghorn Cross	123	122.95	Georgia
E. J. Covey	Black Minorca	117	117.60	Texas
Ben G. Monroe	Ancona	122	117.00	Georgia
Laclede Hatchery	Black Australorp	116	116.50	Oklahoma
Highland Poultry Farm	White Giant	105	112.40	Rhode Island
Iowa Master Breeders	Buff Orpington	107	111.80	Missouri
Harry Phillips	Columbian Rock	95	101.70	Missouri
Lindstrom Poultry Farm	Buff Minorca	114	100.55	Texas
R. L. Jones	Light Brahma	92	97.20	Hunterdon, N. J.
Chas. C. Ward	Buff Leghorn	99	95.60	Oklahoma
S. E. Raymond	Lamona	Unavailable		Storrs
Cedarlaid Poultry Farm	Brown Leghorn	95	79.40	Florida
Daniel S. Riker	Buff Rock	66	54.60	Maine
Walter Dobe	Barnevelder	31	33.50	Western New York

High Hen in Each Standard Test to March 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	150	163.55	Rhode Island
W. H. Wilson	Rhode Island Red	149	160.70	Georgia
E. B. Parmenter	Rhode Island Red	146	160.25	Storrs
Thomas Mettler	Rhode Island Red	146	157.90	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	143	157.20	Passaic, N. J.
W. C. Mullins	Rhode Island Red	143	153.75	Texas
E. B. Parmenter	Rhode Island Red	141	151.35	Maine
A. J. Williams	New Hampshire	137	150.00	Florida
Piho Brothers	White Leghorn	139	148.85	Pennsylvania
J. J. Warren	Rhode Island Red	136	147.60	New York State
J. O. Coombs & Son	White Leghorn	137	146.65	Oklahoma
J. J. Warren	Rhode Island Red	136	145.55	Michigan
Henrich Poultry Farm	White Leghorn	136	144.20	Missouri
E. B. Parmenter	Rhode Island Red	139	143.85	Western New York
Nelson Leghorn Breed. Farm	White Leghorn	130	137.05	Arizona
Holser's Valley Farm	White Leghorn	129	134.90	Central New York

High Hen in Each Standard Test for February

Owner	Breed	Eggs	Points	Test
Moss Farm	Rhode Island Red	29	31.90	New York State
R. O. Wagemaker	Rhode Island Red	29	31.90	Western New York
L. J. Demberger	White Wyandotte	29	31.90	Florida
George A. Pearce	White Leghorn	29	31.90	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	29	31.90	Rhode Island
Thomas Mettler	Rhode Island Red	29	31.90	Hunterdon, N. J.
R. O. Wagemaker	Rhode Island Red	29	31.80	Georgia
J. A. Hanson	White Leghorn	29	31.80	Storrs
Moss Farm	Rhode Island Red	29	31.70	Maine
Horseshoe Poultry Ranch	White Leghorn	29	31.70	Texas
W. C. Eckard	White Leghorn	28	30.80	Michigan
Riley Poultry Farm	Barred Rock	28	30.80	Central New York
J. O. Coombs & Son	White Leghorn	28	30.80	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	28	30.80	Missouri
Lindstrom Poultry Farm	White Leghorn	28	30.35	Pennsylvania
Del Rio Farm	White Leghorn	27	29.70	Arizona

20 Highest White Leghorn Pens in Country to March 1

Owner	Eggs	Points	Test
J. A. Hanson	1713	1768.05	Storrs
J. A. Hanson	1698	1756.75	Storrs
W. E. Pyles and Son	1569	1638.70	Georgia
George M. Heberer	1592	1626.50	Texas
George M. Heberer	1556	1620.00	Texas
W. E. Pyles and Son	1529	1619.90	Georgia
Alfred Macmillan	1521	1614.15	Texas
Wm. L. Gilbert Home	1543	1613.90	Storrs
Horseshoe Poultry Ranch	1612	1603.55	Texas
Kauder's Pedigreed Leghorns	1561	1598.90	Georgia
Kauder's Pedigreed Leghorns	1525	1590.90	Georgia
Guy A. Leader	1551	1586.95	Storrs
W. A. Seidel	1567	1586.80	Texas
A. E. Guinn	1610	1583.70	Georgia
Sand Springs Home Farm	1606	1576.50	Texas
C. B. Davidsen	1513	1566.95	Georgia
Erath Egg Farm	1540	1564.15	Texas
Erath Egg Farm	1492	1555.95	Texas
Foreman Poultry Farm	1542	1548.75	Texas
C. O. Davis	1476	1548.25	Texas

20 Highest Rhode Island Red Pens in Country to March 1

Owner	Eggs	Points	Test
H. J. Hardin	1672	1750.80	Georgia
E. B. Parmenter	1600	1731.15	Rhode Island
W. C. Mullins	1612	1707.45	Texas
Alampi Poultry Breeding Farm	1703	1703.05	Passaic, N. J.
Thomas Mettler	1635	1687.05	Hunterdon, N. J.
R. E. & F. H. Kendrick	1557	1661.35	Rhode Island
J. J. Warren	1607	1660.55	Storrs
H. J. Hardin	1585	1655.20	Georgia
E. B. Parmenter	1545	1650.65	New York State
Ralph W. Anderson	1604	1650.50	Storrs
E. B. Parmenter	1567	1640.70	Storrs
W. H. Wilson	1695	1634.35	Georgia
To-Lani Farm	1667	1626.95	Georgia
W. C. Mullins	1549	1608.45	Texas
Thomas Mettler	1553	1602.60	Passaic, N. J.
E. B. Parmenter	1538	1593.50	Western New York
J. J. Warren	1519	1586.55	New York State
Alampi Poultry Breeding Farm	1497	1585.80	Passaic, N. J.
W. C. Mullins	1517	1583.55	Texas
Booth Farms and Hatchery	1525	1571.80	Georgia

20 Highest New Hampshire Pens in Country to March 1

Owner	Eggs	Points	Test
Eben Wood	1569	1695.65	Storrs
George A. Pearce	1605	1603.55	Passaic, N. J.
Thomas A. Mettler	1550	1547.70	Pennsylvania
Pine Mt. Valley Farms	1470	1492.55	Georgia
Kauder's Pedigreed Hampshires	1390	1480.30	Georgia
Fuzzydele Farms	1391	1473.85	Pennsylvania
Hubbard Farms	1494	1473.45	Pennsylvania
T. J. Harrold	1467	1457.85	Georgia
Ned C. Willoughby	1475	1453.60	Georgia
George A. Pearce	1408	1450.45	Hunterdon, N. J.
Pine Top Poultry Farm	1451	1448.30	Georgia
Pine Mt. Valley Farms	1457	1446.00	Georgia
Joachim Breeding Farm	1392	1441.00	Pennsylvania
A. J. Williams	1356	1432.80	Florida
Pine Top Poultry Farm	1381	1427.95	Michigan
Pine Top Poultry Farm	1327	1427.90	Storrs
Lamar W. Sexton	1392	1419.20	Hunterdon, N. J.
Eben Wood	1340	1414.10	Passaic, N. J.
Floyd H. Moore	1399	1405.35	Pennsylvania
Little's Poultry Farm	1376	1373.15	Florida

20 Highest Barred Plymouth Rock Pens in Country to March 1

Owner	Eggs	Points	Test
Norman W. Amidon	1619	1639.65	Pennsylvania
R. C. Cobb	1504	1523.45	Storrs
J. W. Schaible	1509	1477.40	Hunterdon, N. J.
Dryden Poultry Breeding Farm	1499	1445.50	Storrs
P. N. Hibbard	1445	1410.10	Storrs
E. B. Parmenter	1351	1404.00	Georgia
Fuzzydele Farms	1405	1388.85	Storrs
Riley Poultry Farm	1418	1368.85	Texas
Riley Poultry Farm	1335	1350.75	Oklahoma
Broad Acres Farm	1388	1344.25	Storrs
Dryden Poultry Breeding Farm	1400	1343.90	Pennsylvania
R. R. Parks	1332	1335.50	Maine
R. C. E. Wallace	1254	1302.80	Georgia
Riley Poultry Farm	1310	1301.85	Georgia
R. C. E. Wallace	1320	1300.90	Florida
R. R. Parks	1331	1296.25	Pennsylvania
Woody's Hatchery and Poultry Farm	1329	1282.00	Georgia
Stuart W. Smith	1289	1281.80	Storrs
R. R. Parks	1257	1277.55	Florida
Penn's Poultry Breeding Farm	1290	1277.35	Texas

20 Highest White Plymouth Rock Pens in Country to March 1

Owner	Eggs	Points	Test
Townsley Trapnest Farm	1481	1504.75	Georgia
John Spangenberg	1438	1448.00	Storrs
E. A. Hirt	1397	1436.85	Storrs
John Spangenberg	1386	1403.40	Maine
Riley Poultry Farm	1364	1378.95	Oklahoma
Homestead Farm	1516	1377.05	Pennsylvania
Drumm Egg Farm	1356	1370.40	Georgia
Booth Farms and Hatchery	1390	1369.75	Texas
Kalerok Farm	1303	1360.15	Maine
E. A. Hirt	1278	1330.40	Rhode Island
Riley Poultry Farm	1425	1322.75	Georgia
Booth Farms and Hatchery	1251	1305.95	Missouri
Kalerok Farm	1252	1298.90	Pennsylvania
Riley Poultry Farm	1357	1294.15	Storrs
Kalerok Farm	1183	1256.75	Rhode Island
Four Winds Farm	1289	1255.05	Michigan
Albert C. Lawton	1224	1221.50	Storrs
Booth Farms and Hatchery	1202	1211.15	Oklahoma
A. H. Ward	1224	1206.30	Oklahoma
Clyde Cochran	1207	1196.35	Oklahoma

Average Production in Each Test to March 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. in Ounces	Per Cent Mortality for Feb.	Per-Cent Mortality to Mar. 1
Georgia	1,352	97.87	97.51	23.91	1.84	8.94
Storrs	1,300	94.55	95.61	24.26	.92	4.23
Pennsylvania	1,079	95.06	94.68	23.90	3.15	7.04
Texas	1,456	94.04	94.40	24.07	1.99	7.76
Passaic, N. J.	1,144	88.76	89.80	24.26	1.39	4.89
Oklahoma	650	88.85	89.58	24.19	2.30	7.53
Hunterdon, N. J.	650	84.69	85.67	24.26	1.07	5.38
Florida	1,248	84.45	84.69	24.04	1.52	6.81
Michigan	741	81.71	82.18	24.12	2.02	6.74
Arizona	390	80.92	79.49	23.56	1.28	7.69
Rhode Island	650	75.91	78.65	24.86	1.38	9.38
Maine	1,027	77.45	76.50	23.68	1.75	7.10
New York State	1,092	74.61	75.64	24.31	1.37	5.21
Missouri	780	68.23	70.07	25.10	2.17	7.69
Central New York	910	61.33	61.57	24.07	1.42	3.62
Western New York	884	61.04	61.37	24.12	1.24	4.63
All Tests	15,353	83.30	83.84	24.14	1.94	7.45

High Pen, Each Breed, in Illinois Non-Standard Test to March 1

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	927	883.75
Walter Swanson	White Leghorn	822	829.60
John Pfeifer	New Hampshire	682	741.65
Belldear Hatchery	White Wyandotte	727	730.95
F. S. Tarbill	Rhode Isand Red	732	724.90
Berry Ajax Hatchery	Black Australorp	711	708.80
Illinois Hatchery	White Rock	640	639.50
Wallace Moody	Buff Rock	493	489.90

5 High Pens, R. O. P. Progeny Test, Paterson, N. J., to March 1

Owner	Breed	Eggs	Points
Crooks Farm	Rhode Island Red	1799	1826
E. B. Parmenter	Rhode Island Red	1784	1789
J. J. Warren	Rhode Island Red	1607	1601
W. B. Coles	White Leghorn	1602	1570
E. R. Rutter	White Rock	1555	1526

High Pen, Each Breed, in Vineland, N. J., Hen Test to March 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	860	939	Two-Year
E. B. Parmenter	Rhode Island Red	796	867	Two-Year
Hockhockson Farm	Barred Rock	723	774	Two-Year
Albert Lawton	White Rock	560	607	Two-Year
Pine Top Poultry Farm	New Hampshire	400	438	Two-Year
Sebold Poultry Farm	White Leghorn	547	585	Three-Year
G. E. Coleman	Rhode Island Red	393	422	Three-Year
Nedlar Farm	New Hampshire	370	400	Three-Year
Kerr Chickeries	Rhode Island Red	612	664	Mixed-Age
Quimby School	White Rock	589	637	Mixed-Age
J. A. Hanson	White Leghorn	579	633	Mixed-Age
Schwegler's Hatchery	White Wyandotte	560	605	Mixed-Age
Kerr Chickeries	Barred Rock	534	577	Mixed-Age
Wene Chick Farm	New Hampshire	472	508	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	4697	5076	Two-Year
J. J. Warren	Rhode Island Red	4516	4846	Two-Year
Schwegler's Hatchery	Barred Rock	3901	4075	Two-Year
Albert Lawton	White Rock	3553	3767	Two-Year
Pine Top Poultry Farm	New Hampshire	3177	3430	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6507	6980	Three-Year
J. J. Warren	Rhode Island Red	6277	6762	Three-Year
Nedlar Farm	New Hampshire	5025	5408	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to March 1

Owner	Breed	Eggs	Points	Class
E. B. Parmenter	Barred Rock	921	1010.65	Two-Year
J. A. Hanson	White Leghorn	918	1006.35	Two-Year
J. J. Warren	Rhode Island Red	825	900.00	Two-Year
Fuzzydele Farms	New Hampshire	799	877.95	Two-Year
Lindstrom Poultry Farm	White Wyandotte	664	726.65	Two-Year
Fuzzydele Farms	White Leghorn	858	942.85	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Lindstrom Poultry Farm	White Leghorn	4349	4653.25	Two-Year
J. J. Warren	Rhode Island Red	4346	4627.60	Two-Year
E. B. Parmenter	Barred Rock	4232	4533.80	Two-Year
Fuzzydele Farms	New Hampshire	4054	4356.20	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3754	4008.30	Two-Year

Infertile Incubated Eggs for Hogs

Shortly after the first of the year, at the beginning of the hatching season, I started four pigs to utilize the infertile eggs and other waste from my incubator. This material, plus some ground feed to balance it, made them grow very well, so I had produced some cheap pork by the end of June. In 1938 the price of hogs was good in July, but I wasn't suited with the price in 1939, so I held on and boarded the pigs along during the summer on various odds and ends which would otherwise have gone to waste, with some grain, and fattened them up this fall I waited just a little too long to sell them to get the best price, but when they finally went to market one weighed 370 pounds alive and the other three dressed out 935 pounds, so they ran into a fairly sizeable sum at that.

Upon inquiry, I find quite a number of poultrymen who raise a hog or two every year as a means of utilizing such waste as incubator discards, entrails from dressing chickens, and such chickens as are not marketable. Such material represents the protein supplement which is the most costly part of a hog's ration, and use should be made of it.

There are three precautions which should be mentioned in connection with this practice. First, keep the hogs in a tight pen away from the chickens and keep the pen clean; second, do not spread the hog manure on the range or where chickens can get to it, and, third, if entrails are fed in any quantity, remove the gizzards, as the grit which they contain may prove harmful to the hogs. Of course the hogs should not be expected to do well on this stuff alone, but should receive sufficient middlings and corn meal to make a balanced ration.

—R. L. Scharring-Hausen, Pennsylvania Farmer, Dec. 30, 1939.

THE SCEPTRE of the Negro King of Mardi Gras is a broomstick topped with a white rooster.

—Carl H. Schroeder, Poultry Tribune, March, 1940.

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Lindstrom Poultry Farm	White Leghorn	4349	4653.25	Two-Year
J. J. Warren	Rhode Island Red	4346	4627.60	Two-Year
E. B. Parmenter	Barred Rock	4232	4533.80	Two-Year
Fuzzydele Farms	New Hampshire	4054	4356.20	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3754	4008.30	Two-Year

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Vol. 2, No. 17 May, 1940

Better Balanced Egg Prices Needed

By EDMUND H. REEMAN

Condensed from N. J. Farm and Garden

OUR present methods of marketing eggs are too haphazard and slipshod; much of our marketing machinery is antiquated and certainly a long way from being scaled to present productive capacities. Walk through Greenwich and Duane Streets, New York City, and you will find it hard to believe that you are in the world's largest metropolitan egg marketing center. The ramshackle buildings, the pokey, hole-in-the-corner facilities, even the methods of doing business suggest not this modern age but literal horse-and-buggy days. With a product so susceptible of deterioration as a quality egg, some way of bettering and simplifying distribution from producer to consumer is a primary need. Nor are our country egg auctions in producing areas more than a partial answer to the problem.

Another basic aspect is to be found in what I call the psychological attitude of many egg producers themselves. Go into many a gathering of poultry producers, and you will find that much of the talk is concerned with the price of eggs. What peak level will egg prices reach next fall? What will be the low price of the spring season? What can we do to increase the price of eggs? Nine times out of ten

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(New Jersey Farm and Garden, March, 1940)

the general attitude will be one of dissatisfaction with egg prices, no matter what the level may be. Boost the price of eggs someway, anyway, even by governmental interference in the egg markets, if necessary; or by new legislative enactment restricting imports into particular local territory. In short, build hampering walls of trade restriction as a means to trade improvement. What an idea!

Egg Prices Relative

Now, I am not saying that the price of eggs is unimportant to the poultryman. What I do want to suggest is that the price of eggs, after all, is important only in relation to other factors, for example, cost of feed, general production and overhead costs, and, chief of all, volume of sales.

Other things being equal, it is better for any poultryman to sell 1,000 dozens of eggs at 30 cents a dozen than 100 dozens at a dollar a dozen. When I first entered the poultry business 16 years ago, they were still talking about dollar-a-dozen eggs around here. Actually the highest price I ever got was 84 cents. But unless I am greatly mistaken, we shall never see such prices again. Frankly, I don't even want to see dollar-a-dozen-eggs again. In the first place, because they are not worth it. In the second place, because it could only mean that something was radically wrong with the poultry business or with the country itself.

It seems to me that with our present mass production capacities, coupled with our better balanced, year-around levels of production, we cannot too soon awake to the fact that the end of the old seasonal, fluctuating egg price scale is in sight. Every year now sees an earlier reaching of the peak price and a rapid lowering of the peak price level. This fact has already had far-reaching effects in relation to the cold storage egg deal. That it ultimately means the elimination of the cold storage egg deal from the egg price structure picture would seem certain.

Better Balance Needed

If we are to lay sound foundations for the future success of the poultry industry as a whole, what we need is not higher prices — certainly not boosted prices—but better balanced prices and ever-increasing sales volume. We need, also, in our product a delicacy of quality that will be its own best sales argument, and, in the merchandising of that product, we need a technique that includes both the eye appeal of attractive appearance and the pocketbook appeal of economy.

Even with eggs at a dollar a dozen, it was the price of eggs in the old spring flush season that affected most the poultryman's income. Today, and in the future yet more, it will be the margin of his profit, far more than the actual price of his product, that will determine the poultryman's economic stability. And there can be no margins of profit for anyone without wide consumer demand and increasing consumer acceptance.

Moving Pullets to Range

With the approach of what appears to be real spring weather, there is a tendency to rush moving pullets out on range in order to overcome crowded brooder house conditions. This problem is most acute on farms where large brooder houses without runs or sunporches are used.

When ample roosting space is provided and the pullets are taught to roost, the seriousness of crowding is greatly reduced. However, whether pullets roost or not, the room temperature under crowded conditions becomes high and a radical change in temperature when the pullets are moved out must be avoided if possible.

Pullets in brooder houses, even though crowded, are close to the feed and water and there is every encouragement for heavy food consumption. When pullets are moved out on range, the change in temperature, the change in surroundings and the change in feed hoppers and water fountains tend to decrease food consumption and slow down digestive activity.

Pullets carrying a light coccidiosis infection that would not be serious, in fact, would not be noticed if the birds were spread out in the houses without a radical change of conditions, may lose their resistance and break down with coccidiosis when moved. It is under such conditions that the cold weather shelter with three tight sides provides much more favorable conditions than the ordinary shelter.

Even though the wind and cold have been shut out by bags or other temporary covering, poultrymen sometimes make the mistake of vaccinating for chicken pox, changing rations or making other changes at the time the pullets are moved because it saves an extra handling or saves moving equipment. All such changes should be avoided when the pullets are moved out on range as the change in temperature and the opportunity to eat are severe enough without additional changes being made. Changes in feed, changes in hoppers, chicken pox vaccination and other changes that may upset the pullets should be delayed for at least two or three weeks until the pullets have become well established and have built up natural resistance to the elements under outside conditions.

—Roy E. Jones, New England Homestead, April 20, 1940.

Out-of-Season Brooding

By **FRED P. JEFFREY**
New Jersey Agricultural Experiment Station

Condensed from American Poultry Journal

POPULAR sentiment in favor of a system of out-of-season hatching has been based on two facts, namely: (1) an inefficient use of the laying house due to heavy mortality; and (2) a desire to make more efficient use of the brooding equipment.

As an alternative to hatching out of the normal season, some poultrymen have found by dividing the hatching equally between February and May they can maintain a full capacity in the laying house. Others have solved the problem by utilizing the brooding units for laying birds during the season of the year when no brooding is done. This latter plan involves a program of heavy culling at both the growing and laying stages and a fairly long hatching season.

An experiment to study the effect of date of hatch on chick livability, rate of growth, cost of pullet production, egg production, egg size, and profit in the laying house was started in 1936 at the New Jersey Agricultural Experiment Station. Some preliminary results based on three years of pullet production and a two-year average of results in the laying house are presented here.

Year-Around Hatching

The plan of the experiment was to start groups of approximately 300 S. C. W. Leghorn chicks at five periods scattered throughout the year—Jan. 15, April 1, June 15, Sept. 1 and Nov. 1. All chicks came from the Station strain of Leghorns. The factor of breeding was as uniform as could be arranged.

Electric brooding in non-insulated wooden range houses was practiced throughout. It is significant to note that the June chicks required more than three times less electricity than the January chicks.

Summer Appetites Lag

Chicks were started on the N. J. Experiment Station laying mash and continued on the same feed as long as retained in the project. An extra 5 per cent of alfalfa leaf meal was fed in the mash for the first four weeks. Grain was hand fed twice daily for the first six weeks and then hopper fed (equal parts of whole wheat and cracked corn) from 6 to 24 weeks. Birds had access at all

American Poultry Journal, 536 So. Clark St., Chicago, Ill.
(American Poultry Journal, May, 1940)

times to mash, cracked corn, and whole oats.

Figures showing grain, and total feed consumption, mortality to 24 weeks of age and body weight per pullet at 12 and 24 weeks of age are given in the accompanying table. It is seen that the November and January hatched pullets grow at a more rapid rate because of the cold weather prevailing during their growing period. The April and June hatched pullets grow more slowly, and as a result, consume less feed per pullet. Since all chicks were given free range at all times, it is reasonable to assume that the spring hatched chicks saved a little on the feed bill by consuming relatively more green grass.

Our experience in growing period mortality is somewhat contrary to general recommendations in that the June chicks showed excellent livability. The September and June chicks lived better than those hatched at other seasons. Brooding conditions in June and September are characterized by being warm and dry with plenty of sunlight available. No coccidiosis outbreaks were noted in these hatches in a three-year period.

Cash cost per pullet raised for the different hatches was calculated and included cost of chick (hatchery prices were used as follows: January, 16 cents; April, 15 cents; June, 14 cents; September, 15 cents; and November, 16 cents) electric cost in brooding (3 cents per KW hour), cost of feed (average retail price in New Jersey), and rate of mortality. Receipts from sale of broilers at the 2 lb. level were included in the calculations. June pullets were cheapest to raise (50 cents per pullet) and November and January pullets the most expensive (87 cents per pullet). April and September pullets cost about 70 cents each.

April Birds Lay Best

For a full laying year (24 to 76 weeks of age inclusive), the birds from all hatches received 15 hours of light. Birds were hopper fed mash, corn and oats, and no supplements were given at any time. No culling was practiced during either

Date of hatch	Feed consumed to 24 wks.			Body wt. at		Mortality to 24 wks.
	Mash lbs.	Grain lbs.	Total lbs.	12 wks. lbs.	24 wks. lbs.	per cent
Jan. 15	9.2	11.0	20.2	1.6	3.1	19.9
April 1	9.2	9.6	18.8	1.6	2.9	12.2
June 15	7.3	11.3	18.6	1.4	2.9	11.8
Sept. 1	8.6	13.2	21.8	1.5	3.0	8.5
Nov. 1	8.6	13.9	22.5	1.5	3.2	16.5

the growing or laying periods, and laying house mortality was about the same in all hatches. The ratio of grain to mash consumed by laying birds was approximately two to one, that is, with an average feed consumption per bird of 81 lbs., 54 lbs. were corn and oats, and 27 lbs. were mash.

All eggs were shipped at the time of trapnesting and their value calculated on the basis of the average price received for white Grade A extras and mediums and white pullets and pee wees at the Flemington, N. J., auction market. Likewise, the value of the birds as fowl at the end of the laying year was calculated on the basis of prices prevailing at Flemington.

On the basis of a two-year average, the April hatches laid the greatest number of eggs per bird (hen-day basis)—172. The June hatches averaged 166 while the September, November, and January hatches averaged about 151 eggs each.

In calculating labor income, the following were considered: (1) cash cost of pullet production; (2) laying house profit (total value of egg receipts, plus value of birds as market fowl at the end of the laying year, minus feed cost). It was found that the April and June hatches were equally profitable, returning about 35 cents more per bird than the September or November hatches. The January hatched pullets proved the least profitable by returning 45 cents less than the April or June hatched pullets.

Five widely separated hatches are not recommended either from the standpoint of efficient use of buildings or equipment or from the standpoint of disease control. A combination of two hatches separated by a three-month period should allow for efficient use of brooding and laying equipment and at the same time prove more advantageous from the standpoint of disease control. Some of the preferred combinations now being practiced include: February and May; March and June; and April and September.

◀◀ IN THE COURSE of one year, a chain store upped its sales of poultry by 6 per cent. In January, 1939, poultry sales were 3.5 per cent of the total of all meat sales, while in January of this year, poultry sales increased to 9.4 per cent of all meat sales.
—U. S. Egg and Poultry Magazine, April 1940.

◀◀ THE secretary of the Chicago Cubs baseball team tells of an interesting observation at breakfast with the ballplayers of that club. He says that of 21 players at breakfast one morning 19 were eating ham and eggs—and two bacon and eggs, which just about made it unanimous for eggs.
—Plymouth Rock Monthly, April, 1940.

Quality in Feeds Determines Amount of Feeder's Profits

By GRANT CARD

Condensed from ManAmar Magazine

QUALITY in feed means quite a good deal more than is sometimes realized by the feeder. Too often the quality factor is compared with the feeder's ability to buy, and the dealer attempts to meet the feeder's pocketbook instead of explaining how much more profitable it is, in the long run, to buy "QUALITY."

Let us analyze the individual consumption of a hen: the hen requires only between 85 and 90 pounds of feed in 365 days or, approximately 3.8 ounces per day of combined grain and mash feed. Considering the very small amount of feed a hen consumes, we begin to understand how importantly this question of "quality" enters into the scheme of the daily consumption of feeds and we realize how adequate the small amount consumed daily must be from a standpoint of "quality." One ounce of this small amount of feed of either the wrong quality or of poor quality, affects the efficiency of this living egg making machine to the extent of approximately 25 per cent and, in the course of a year, we would, on this assumption, close down the machinery for approximately 91 days.

How often we hear the words, "My chickens are not producing now—I need something cheap because they are not making any money now."

But, can we say for this reason, that the individual body requirements of foods to sustain life are any different? Is not the hen, when she is moulting, rebuilding the waste of the last cycle of production and, is not the cow building a calf internally from which the feeder expects a return? Should quality feed be neglected here? Quality, at this time, may be compared very well with the building of the foundation of a house which when built with a poor quality of cement and other inferior materials results in cracked walls, in bulging siding and finally in complete collapse.

The feeder often does not consider that the cost of processing and distributing feeds is exactly the same on the wrong feed or the feed of poor quality as it is on the feed of good quality with a correct proportion of ingredients. And, as manufacturing and distributing costs are

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(ManAmar Magazine, Vol. 4, No. 10)

all based more or less on a tonnage basis, why should not the feeder make his investment in feeds of good quality and correctness that will, in a major way, fulfill the requirements and enable the animal to perform to the maximum efficiency of its breeding and inheritance.

Most feeders are interested in profits from flocks. To these profit-minded feeders, I would make this all-important point—the most profit per hen, per cow or per hog is, in my opinion, very definitely dependent upon the use of Quality Feeds.

How to Prevent Grass Eggs

When the wheat starts coming up in Missouri and Kansas we begin to get what are called "grass eggs." Further north, in Iowa, we don't get them until the oats begin to come through.

They don't look at all appetizing. The yolk is dark and greenish. If you've ever seen one in front of a candle, you know how dark it shows up.

As far as anyone has been able to find out, grass eggs are caused by too much green feed. Chickens need green feed. We know that. They even cut it now, and dry it, and then mix it with feed or buttermilk so chickens—and other livestock, too—can have "spring range" the year around.

So it's not the green feed itself that causes the grass eggs, but the fact that the birds eat too much of it.

There are two things you can do about it.

First, feed your hens a ration the year around that contains those things they need and get in grass. If they weren't so starved for it, they probably wouldn't make such pigs of themselves the minute it begins to get green in the spring.

Second, keep them inside until noon. By that time they will have eaten a good part of their feed for the day and aren't so likely to stuff themselves on grass.

That way I think you could cut down the number of grass eggs. If you're getting a lot of them, try it.

There is another good reason for keeping the hens inside until noon, especially in the spring when the weather is bad.

By noon most of the eggs have been laid and if you gather them as soon as the birds are turned out, they won't have a chance to soil the shells with muddy feet. And you won't have as many dirty eggs.

—Frank Priebe's Weekly Letter to Poultry Raisers, April 13, 1940. Copyrighted.

The Cold Storage Egg

By C. C. WARREN

Agricultural Adjustment Administration

Reprinted from The Agricultural Situation

THE cold-storage egg industry was developed originally — in the 1890's — as a device for making available to consumers an adequate supply of eggs the year round. It was intended to reduce the seasonal fluctuations in supply by carrying over the surplus of eggs produced in spring and summer to supplement the reduced production of fresh eggs in fall and winter. It accomplished this result, and was probably a principal factor operating to expand the poultry and egg industry in this country.

Expansion Was Rapid

The cold-storage egg industry expanded rapidly. It was not long until some 11 million cases of shell eggs a year were going into the storage warehouses. This quantity was approximately 10 per cent of the total production of eggs. Techniques for retarding the deterioration of quality of eggs in storage were developed from time to time. The gap between the quality of fresh and cold storage eggs was steadily narrowed. Cold storage egg legislation enacted in the early days of the industry went virtually into the discard.

Improvement in the quality of storage eggs has been an asset from the standpoint of the housewife and the manufacturer of food products in which eggs are used. And yet the quantity of shell eggs going into cold storage has declined in the last 10 years. Only about 6 million cases of shell eggs are now stored annually, as compared with 11 million cases as recently as 1930.

More Fresh Eggs in Winter

Two factors responsible for the reduction in the storing of shell eggs have been the lengthening of the season of egg production, and the expansion of the frozen egg industry. During the last 10 years the production of fresh eggs during fall and winter has increased rapidly, and the seasonal variation in prices of eggs has shown a corresponding flattening. More consumers now are able to afford fresh eggs in November and December.

The practice of breaking and freezing eggs was begun by egg packers nearly 40 years ago in an effort to salvage eggs which could not readily be sold in the fresh markets nor stored in the shell. Food

U. S. Bureau of Agricultural Economics, Washington, D. C.
(The Agricultural Situation, April 1940)

manufacturers bought these frozen products, and as the commercial food industries expanded the egg-freezing business increased. Better qualities of eggs were being frozen, and freezing operations became heaviest in the spring season of flush production of eggs.

More Frozen Eggs

Production of frozen-egg products increased more than 200 per cent during the decade of the 1920's, to approximately 155 million pounds in 1929. Production declined during the depression but then increased to a peak of 225 million pounds in 1937. The output was reduced sharply to 133 million pounds in 1938, but was increased again to a total of 198 million pounds last year. Imports of frozen-egg products declined from about 16 million pounds 20 years ago to less than 1 million pounds now.

United States: Production of Frozen Eggs, 1921-39 [1]

Year	Total frozen-egg products Million pounds	Shell-egg equivalent Million cases
1921	46	1.3
1922	49	1.4
1923	71	2.0
1924	57	1.6
1925	79	2.3
1926	92	2.6
1927	129	3.7
1928	148	4.2
1929	155	4.4
1930	185	5.3
1931	152	4.3
1932	138	3.9
1933	171	4.9
1934	198	5.7
1935	206	5.9
1936	208	5.9
1937	225 [2]	6.4
1938	133 [3]	3.8
1939	198 [3]	5.7

[1] 1921-36 unpublished estimates made by U. S. Tariff Commission, based on original entry into cold storage.

[2] "Production of Frozen Eggs in the United States in 1937," Poultry Section. Agricultural Adjustment Administration.

[3] Estimated.

Most of the egg-breaking and freezing plants are located in the Mississippi and Ohio River valleys. Additional plants are located in large centers of population on both the Atlantic and Pacific Coasts. In 1937 the States of Missouri, Illinois, Kansas, and Texas led in total volume of frozen-egg production. The frozen products are sold principally to large food manufacturers — mayonnaise and macaroni makers, bakers, and confectioners.

Excess of Frozen Whites

The frozen-egg industry has been characterized by alternate periods of surplus production during the last 3 years. Another problem is an excess quantity of frozen albumen which acts as a depressing influence on the price level of both albumen and frozen yolks. During 1939, for example, there was a monthly average of approximately 7.5 million pounds more albumen in storage than there should have been in a proper relationship with the quantity of yolks.

Since albumen is the product chiefly in surplus, prices for frozen albumen are usually at low levels. For producers of frozen-egg products, therefore, to dispose of their output at a profitable price, the selling price of yolks must be held at a rather high level, and this in turn tends to restrict the consumption of frozen yolks.

The industry has been aware of this condition for several years and many attempts have been made to devise new uses for albumen for food as well as for industrial purposes. Recently the United States Department of Agriculture authorized its Western Research Laboratory at Berkeley, Calif., to carry on research aimed at finding new nonfood uses for all poultry products, which of course includes albumen.

If it is possible to discover new uses which will use significant quantities of albumen, it is believed that the price of frozen albumen might rise and thereby permit a commensurate decrease in the price of frozen yolks. The net result would be a stimulated demand for both albumen and yolk, and an increase in the total output of frozen-egg products. Some distributors also are experimenting in the use of 10 and even 5-pound cans of frozen-egg products to increase sales to small users.

Easy Way to Open Feed Sacks

On a hook in our feed room hangs a pair of sharp manicure shears, to be used in opening feed bags. Cut one thread at the end of the bag with the smallest amount of extra thread hanging, and 99 times out of 100, you can unravel the rest without any difficulty. The short end is generally on the left side of the sack as you look at the front, though not always. However, we always look for the short end regardless of the side it's on.

—K. B. Shaw, American Poultry Journal, April, 1940.

❝ NAZI propagandists, in releasing news of the conquest of Denmark, pointed out the fact that all Denmark exports of eggs hereafter would go to Germany and said this would go a long way in helping Germany win the war. Denmark's egg exports, portioned equally among the German population, will mean an increase of only one egg per person per month, so it just goes to show you what one nation thinks of eggs as a nutritive food.

—Don M. Turnbull, Poultry Supply Dealer, May, 1940.

City Egg Routes

By GERALD SEATON

Condensed from Poultry Item

EIGHT years in this work have taught me a few things about merchandising eggs in a big city. I believe the best prospect is the housewife, because she pays more and I have found her easier to retain as a customer.

There is no magical way to sell in any town. The only way seems to be by one route, WORK. You cannot be a success unless a lot of work is spent at home preparing for the job. It takes work to produce quality eggs and it takes quality eggs to get repeat orders. It takes quality supreme to get those same customers to tell their friends about your eggs.

Preparing Eggs for Customers

Raise several broods of quality pullets at equal intervals throughout the year, because you must be able to give year-round service. You will hear from many who are through with egg men because they left their customers down in the fall, when eggs are needed most. Keep your eggs clean and free from odors and flavors. Clean eggs make a good sales appeal. They imply that you are particular. Bad odors and flavors are associated with old eggs, regardless of how fresh the eggs may appear, because the consumer does not understand the many causes of odor and flavor.

Pre-cool eggs by timely collections and the most efficient cooling methods possible. The methods ordinarily recommended will probably get you by for the winter but by April your eggs should be gathered at least four times daily, taken immediately to the cooler which should be at most, in the fifties on hottest days. Here you must have an abundance of moisture also, even in winter. Do not leave eggs in container to cool. Remove at once and place on wire tray with fan blowing the cool moist air over each egg. Better still, make a cabinet embodying these principles. If your eggs are to be hauled a considerable distance to town, I believe nothing less than refrigeration will do an efficient job.

Size your eggs into the sizes most acceptable to your customers. I find the housewife is best satisfied with the following packs: Mediums, 21, 22, 23 ounces per dozen; Large, 24, 25, 26, 27 ounces per dozen; and Jumbos, all over 27 ounces per dozen. Prices between sizes of packs vary from two to four cents. Get all you can at all times.

The word "tolerance" has been used in connection with egg grades for years. This is a polite way for the producer to tell the buyer he is cheating him to the extent of not more than 10 per cent. To be safe, the buyer must pay less if he is a wholesale purchaser, and you lose on the value of 90 per cent of your pack for the privilege of putting in 10 per cent that you know does not belong there. If the housewife is the buyer, you will have an unsatisfied customer who is liable to quit you at any moment. Work to do the job of packing right, both for size and quality.

The Item Publishing Company, Sellersville, Pa.
(Poultry Item, March, 1940)

Quality Important

To pack 100 per cent quality means candling every egg. Why? For blood in any quantity; for shell quality and all of the various imperfections that appear. Break some eggs that look "different" to you and learn to select the imperfect ones for your second grade pack. You are not doing a good enough job if you do not have a second grade. You are going to lose first-class customers with those second-grade eggs at a first-grade price.

Selling Methods

Can you sell by telephone? No! The prospect may feel that you are taking unfair advantage of her and an experienced salesman who can employ high pressure methods is necessary to get orders in this way. Furthermore, it is doubtful whether the eggs will be accepted when delivered and if they are, you will find that too many are not sufficiently interested to continue buying.

Can you sell by leaving your card at the door or some form of color card hung on the door knob? No! Two years ago I hung 2,500 cards on door-knobs, advertising my eggs. I got three replies. They all bought. Two are still customers. The third moved away. These bought because they really wanted fresh eggs bad enough to go to the trouble to 'phone me for them. Five days were required to hang these cards at the respective doors. Today, by personal contact at the door, I can average at least 20 good customers in five days.

Only one out of six men that I have tried has been a successful egg salesman. He had been a house-to-house salesman before he tried selling eggs. He knew what it was all about and was prepared to be satisfied with a few sales daily. However, he also realized that a good egg business would be repeat business and he was willing to work for a very few daily sales at first to build a repeat business that would be worth money when developed. Start your own route. Learn the way to sell for yourself. Then, perhaps after half a dozen tries you too will find someone who will develop into one who can be trusted with your own route, because he will not only understand selling eggs but will appreciate what you have and guard it for you.

Don't Cut Prices

The average poultryman who decides to take his eggs to town and retail them direct usually starts out with not less than one case and more likely three or more cases. He selects a street and starts in calling at each house to ask—"Would you want to buy some fresh eggs today?" That lady had "no" on her lips before she ever opened the door; yes, even before she knew what he was selling. Hour after hour passes with an occasional purchase being made by some exceedingly "tight" individual who has found the price lower than usual, although the producer's first idea was to get a better price. Perhaps if he cuts price enough, he can sell 15 or 20 dozen the first day.

He may continue this for a few weeks or even till fall when shortage reduces his volume. He cannot buy and resell because he has been dealing with all the cheap buyers who will not pay a price for good fresh eggs in the fall. You don't want to be in this class. You want to be a success.

You are working to produce a fancy quality egg, and you are out to find the people who appreciate what you have developed because they will be grateful for your endeavor and will gladly pay the price.

Cleanliness Counts

Be clean and neat but not flashy. Always wear the same clothes when you return the second time. A change in appearance may cause the loss of sales.

Uniform Quality

Your eggs should be no larger, no smaller, no fresher every week in the year, and no better than your poorest summer quality. When you select your sample dozens, you must have just one thing different about them. That is, your shells must be white enough that you can candle them at the front door of anybody's home without them showing a pinkish tint that will hide the outline of the air space. The shells must also be smooth and have a uniform number of pores, plainly visible when candled, as these are part of your story.

I prefer to carry only one dozen with me in soliciting. They are packed in a new 2 by 6 carton. Some cartons of this type are in two pieces. These are not satisfactory as they tend to loosen up with the usual amount of handling neccessary in this method of sales. Use the size you are going to have the most of in the near future and work the neighborhood in which you feel that certain size will go best. You may be surprised to know that some of the heaviest buyers and the most wealthy use only mediums, and some of the poorest demand the largest.

I juggle the size of Jumbo eggs from 27 to 28 oz. as a minimum, according to the number of dozens needed. The pack will average usually about ¼ pound more than large, as my eggs run quite heavy. I find the best way to get the price for the pack is first to substitute it for large ones. Then on returning you may remind the prospect that if she were to go to the butcher and he offered her an extra three ounces of meat selling regularly at 24 cents for only 1 cent an ounce, she would take the offer, which is the same thing you are giving her in the jumbo size; 3 ounces for three cents.

Keep Them Fresh

At first I used a 4 quart wood chip basket, painted green, to carry my samples in, but there is some breakage that way and if the eggs are not sold in a few hours, you will be surprised at the way they depreciate. The air space will be larger and the whites more watery. Always keep all eggs in your car well blanketed. Even in winter, the sun may be warm enough when shining through a car window, to warm up your pack in the car. In the summer time this will keep the coolness in the pack. When your customer says, "My, but these eggs are cool," you can say—"Yes, that's the coolness from my springhouse or cellar where they were carried within two hours after they hit the nest." That's where you clinch your sale with the customer, for these city folks really want their foods fresh.

Carry a fountain pen type of flashlight with you that has either a push button on top end or a clasp that, when drawn from pocket, will light if pressed. A light having an end that must be screwed to light is useless because you will not have a third hand to screw with. Carry an extra bulb, too. I once found it most embarrassing to have the light go out when half way through a sales talk. I have never found a cheap light serviceable.

To avoid sunlight interference with your light, wrap a piece of waterproof adhesive tape around the bulb end about three times, allowing it to project about one-eighth inch beyond end of light. Hold egg down in hand to keep from light and place end of light against egg near air cell so it shows plainly. If the day is very bright work the shady side of the street only and get the opposite side when shaded.

When weather is below 45 degrees Fahrenheit, people will not stand at the door long enough to get a good selling, although they may be interested. Don't work in the rain either. The prospect will feel sorry for you and she may buy to help you out. That type of selling does not stick.

When approaching the house, never walk on any grass. Keep your shoes clean and do not walk on a newly-scrubbed wet porch that will track. Come back when porch has dried.

At the door, give the bell one good ring and be listening; first for the ring and then for steps inside. If you hear no bell, buzzer, chimes or footsteps, then knock. If no reply, mark down the house number and put N. R. (no response) after it so you will know to call again. Always finish a street. The last person may be your best customer. Never skip houses.

I always carry a few filing cards, one for each street worked. The street name is written on one end, and each house number is written below it in order worked, whether at home or not. After every home has been contacted the good numbers, together with customers' names, are placed on individual cards of same type. Thus an individual record is kept and you have a flexible route list. On your first contact, if doubtful as to whether you have interviewed the mistress or someone else, it is always wise to mark down details of the interview, for later reference.

While waiting for reply at door, always stand at attention, facing the door with eggs in clear view and resting on one arm. Dress your face in a smile.

Politeness Pays

I have tried salutations as "Good morning," but the prospect may follow it up with "I don't want any," and shut the door before you get started, so begin as soon as possible by saying, "I want you to see how fresh these eggs are." Immediately you have taken an interest in her and broken much of her resistance. Lay down eggs quickly. Pick up one as you draw your light from pocket. Look at her until you get her eye, then say with a smile, "This egg was warm when first laid. As it cools it must shrink and in doing so an air space is formed in the blunt end of the shell. You can see it here. It is that round grey spot, about the size of a dime." Now look at her, hold the light on the egg and wait till she says she sees it. Then say, "Now that is just the normal amount that this egg shrunk in cooling. Any egg with an air space as small as this is very fresh. Try a dozen today and see for yourself how thick the whites are, how round the yolk is and get the flavor too. I have done everything possible to make these eggs the freshest you have ever bought, and I know you will enjoy serving them. These are my large size and the price is 45 cents."

If she has a supply, suggest that she try a half dozen and then if necessary find out about how many days her present supply will last. Promise to be back that day and do not fail. Once you have her sold, you can set the delivery day but never argue that with her at first.

If the prospect is not interested, be polite, apologize for the time you have taken and make a neat exit. I have tried giving out samples too, but you can only gain by this practice where the neighborhood has a maid in every house. Then it is necessary to leave two, telling the maid, "There is one for you and one for the madam," or else she is likely to eat the one herself and never tell the madam.

Best Time to Get New Customers

The best time to work new trade in this manner is after the market has reached its peak in the fall and before Memorial Day. Contacts made after that time are not so good as vacations start and it is hard to find the new folks at home enough to really get acquainted before the market begins to rise. Then they think your price is high and no matter what you tell them, you will not hold enough to justify the trouble.

Three follow-up calls will be necessary before you sell some people. Do not be discouraged if you make few sales on the first call back. Ask permission to call again and as long as they permit you to do so, you still have a chance. When you call and they are out, leave a note telling them you were there and when they may expect you again.

Sampling

When putting out samples, I usually average six samples per hour. One out of every five who sample will buy and about half of that number will become regular customers. If someone tells you that an egg man has every one on the street, pay no attention. I do not believe that is possible in the ordinary city block.

A majority of those who will buy pullet eggs in the fall will not pay the price for large eggs in the spring. If they will not buy mediums in the fall they will not take large ones in the spring.

Service Important

No matter how good your product may be, SERVICE IS HALF of your continued success. Go on your regular day, regardless of the weather or any other work you may have to do at the time. Be dependable. People associate dependability with honesty.

As to credit, I have not lost $15 in eight years. Never allow any account to run over 30 days and if it does not look good to you, just forget to go there when you once get your cash.

When acquainted with a customer, I always have an understanding as to whether she wants her eggs left when she is not at home. If she does, I leave them wherever she tells me to. Make note of this as reminder. In 1939 I lost two dozen this way in the city, by theft, and I have never felt that the party got the eggs when she claimed she did not.

Eggs in the Lunch Boxes

By **ELNA MILLER**
Utah State Agricultural College

Condensed from the Utah Poultry Co-operator

ONE of the many places where the homemaker could use more imagination in this business of egg cookery is with the eggs she puts into the lunch box, whether the lunch is for the school child or the adult. Ask your school janitor about the egg sandwiches he finds in the waste basket. He will undoubtedly report a few cold fried eggs with brown lace edges and some hard boiled, very dry eggs in some others, or perhaps some dry, greasy scrambled eggs. It takes more courage and imagination than most children possess to eat sandwiches of that quality.

Egg sandwiches can be so palatable as well as nutritious and the time and effort involved need be so little. Cook up a supply of hard-cooked eggs on Monday afternoon and make a sandwich paste for what egg sandwiches will be needed the rest of the week. Coddle the eggs so they will be tender and brittle instead of tough and leathery — and remember that anyone can boil an egg, but a good cook never does.

How to Boil Eggs

The good cook starts out with a large quantity of boiling water—one quart for the first egg and one cup for each additional one. The water is boiling when the eggs are put into it, but does not boil after the eggs are added. The kettle is covered and moved back on the stove where it will stay hot but the water does not boil. A soft cooked egg will have the white all set in from five to seven minutes. The eggs will be hard in 30 to 40 minutes. This large quantity of water permits more heat penetration for the egg and more uniform cooking.

Take the hard-cooked eggs out of the water about five minutes before their final cooking time is up and crack the shells. Return them to the water for the rest of the time. This makes them much easier to remove from the shell, particularly if whole eggs are desired.

Hard-cooked eggs which are left whole for some time frequently develop a dark green color where the yolk and white of the egg come together. This can usually be prevented if the eggs are put into cold water as soon as their cooking time is up, and left until they are cold.

Utah Poultry Producers Co-operative Assn., Salt Lake City, Utah.
(Utah Poultry Co-operator, April, 1940)

Remove the cooked eggs from the shell and mince them with a fork until there are no large pieces left that will slide out of the sandwich. Moisten the minced egg with cream or milk, tomato juice or catsup until the egg paste is about the consistency of thick whipped cream. Season slightly with salt. Put this paste into a jar in a cool place and use it as a foundation for various sandwich fillings the rest of the week.

Varied Egg Sandwich Fillings

On Tuesday take out a portion of the paste and add some chili sauce or other chopped pickle.

On Wednesday fry a few extra strips of bacon until they are very crisp, drain off the fat, break the bacon into small bits and add it to some of the egg paste for Wednesday's sandwiches.

Thursday, take some parsley — a lot of it—from your kitchen window garden, chop it fine and add to the egg paste for the egg sandwiches that day. Water cress makes a good variation.

For Friday's egg sandwich you may have a bit of meat which can be chopped fine, or you may shred a carrot or some cabbage or some green pepper or some other raw, crisp vegetable, or fresh tomato in season.

Remember to use good whole-wheat bread for these sandwiches and cut the slices thin. Cream the butter so that it will spread easily out to the very edge of the crust on both slices.

Then spread the egg filling on so that it is as thick as one slice of the bread. Put the two slices together, cut the sandwiches in quarters and wrap in wax paper. Then you really do have a good egg sandwich.

The egg sandwich makes up only one part of the lunch for the school child. He needs a second sandwich with a different kind of filling. He also needs some raw fruit or vegetable and a milk drink if the hot dish at school is not made with milk.

¶¶ TRUCKS are carrying an increasingly larger proportion of eggs to market. Figures compiled by the U. S. Department of Agriculture indicate that 39 per cent of the eggs shipped to the four leading markets (New York, Chicago, Boston and Philadelphia) went by truck in 1939, compared to 29 per cent in 1938. Because it is not possible to get a complete record of truck receipts, it is likely that the actual percentage is higher than indicated by these figures.

¶¶ THE DOMESTICATION of the cock in China dates back to 3,300 B.C., according to Professor L. F. Payne of Kansas State College. The bird was originally named ki or kai, which term is defined is a very old dictionary as "the domestic animal which knows the time." The cock is said to be the only bird that crows every day and every night throughout its whole existence.

—Lorraine L. Engel, U. S. Egg and Poultry Magazine, March, 1940.

Eggs—in the Making

By D. C. WARREN
Kansas State College

Condensed from American Poultry Journal

WHEN we examine the egg critically, we find that it is more complex in its make up than is ordinarily realized. The yolk is for the most part fairly simple in structure. There is found on its surface a light spot not much larger than a pinhead which is the site of the developing chick if the egg is fertile. The specific gravity of the yolk is such that this spot is always on top of the floating yolk.

Egg white consists of four major parts. First, there is a pocket of very watery white immediately surrounding the yolk allowing it to turn freely within the mass of thicker white which encloses the two. The thick jelly-like portion of the white is in turn enclosed in a layer of outside thin white which separates it from the egg membranes.

If the white is carefully examined in a hard boiled egg, it will be found to be made of layers wound spirally about the yolk.

The so-called chalaza is seen in the broken uncooked egg as a more or less twisted structure which helps to suspend the yolk in the mass of white. These chalazae are the result of the egg's rotation as it passes down the oviduct in the process of formation. The egg white contains tiny fibers of microscopic size. These fibers become twisted at the two ends of the yolk and form a sort of network which holds the yolk in place. The inside of the shell is lined with the double membrane.

Measures of Interior Quality

The most common measures of interior egg quality are consistency of the white and color of the yolk. The major factor which contributes to quality in the egg white is the proportion of the two watery layers and the one jelly-like layer which comprise it. Since an incubated egg has a high proportion of watery white, the general impression is that any egg which does not have a large percentage of its white of the jelly-like composition has begun to deteriorate. While this is frequently true, it is not always the case, since fresh laid eggs differ widely in the consistency of their whites.

Yolk color is dependent almost entirely on the type of food eaten. An abundance of vitamin A bearing feeds, such as green plants and yellow corn, tend to give the yolk a deep yellow color. Hens deprived of these feeds tend to lay lighter colored yolks.

American Poultry Journal, 536 So. Clark St., Chicago, Ill.
(American Poultry Journal, March 1940)

Anesthetics Make Study Possible

At Kansas State College in recent years, considerable time has been devoted to the study of the process of egg formation. Until then, most of our knowledge of egg formation was secured from autopsies and chance catching of eggs in various stages of manufacture. In the more recent studies, the hen was placed under the influence of an anesthetic, and by operative methods, the steps of egg formation were observed directly.

The Egg Forming Organs

The major organs involved in the processes of egg formation are the ovary and the oviduct. The ovary is attached to the upper wall of the body cavity near the heart and lungs. It is a cluster of yolks in varying sizes, ranging from those scarcely visible to full sized ones. Most of the yolk growth takes place the last 10 days before laying. Some unknown mechanism starts the various small yolks growing very rapidly in the last few days in the same order in which they are to be laid.

The oviduct is a tube-like organ extending from the ovary to vent. Since it is much longer than the hen's body, it is looped in order to be accommodated. Within the oviduct, egg white, membranes, and the shell are added to the yolk. The oviduct is not attached to the ovary, but has its funnel-shaped upper end in a favorable position to catch or pick up the yolks when they are released from the ovary.

The ripening yolks are each suspended from the upper body wall by a transparent sheath which ruptures to release the yolks. After release, the yolk drops into the body cavity or directly into the funnel shaped oviduct. If a hen is due to lay tomorrow, the yolk for that egg will be released from the ovary in about a half hour after today's egg is laid. A knowledge of this fact makes it possible to observe actually the release of the yolk, or ovulation as it is called, if the hen is anesthetized immediately after laying.

Passage of the Egg Through the Oviduct

The most spectacular feature of the whole process of egg formation is the engulfing of the released yolk by the oviduct. The funnel-shaped upper end of the oviduct gradually encloses the yolk by a laborious procedure which may take from 5 to 15 minutes. Once the yolk is enclosed, the muscles of the oviduct wall forceably start the yolk through the duct. The muscles of the duct and its lining of beating hairlike processes rotate the yolk as it is carried along. This accounts for the white being placed about the yolk as a spirally wound sheath.

The layer of white just outside

the yolk which is quite watery in the fresh laid egg is very jelly-like when first formed. It later becomes watery as the egg passes through the duct. The same process which thins the white also contributes to chalaza formation. The egg white formation takes place as the egg traverses the upper half of the oviduct, called the magnum.

The forming egg then enters the isthmus, a constricted area in which the egg membranes are secreted. From there, it passes into the last portion of the oviduct, the pouch-like uterus. Here the outside watery white is added, and then the egg shell is deposited.

In order accurately to time the egg's passage through the oviduct, the actual pickup of the yolk, following ovulation, was observed, while the hen was under the influence of the anesthetic. Then at 15 minute intervals during the time the egg was traversing the duct, a shallow stitch was taken in the wall of the duct with various colors of thread. These stitches were made immediately behind the forming egg. The overlapping loops of the oviduct make it difficult to determine accurately the position of the egg at any one time. However, when the oviduct bearing the 15 minute markers was removed after passage of the egg, the story of the rate of progress was quite evident. From them, the time spent in each region of the oviduct could be accurately calculated. The major portion of the yolk growth takes place in the last 10 days before it is released from the ovary. After being picked up by the oviduct, the yolk makes no change in its constitution or size.

Time Needed for Egg Formation

It requires about 2½ to 3 hours for the yolk to pass through the magnum where it receives all of its thick white. It spends about 1½ hours in the isthmus where the membranes lining the inside of the shell are secreted. From 20 to 24 hours are spent in the uterus or shell gland where the outside water white is added during the first few hours. After this, the shell is deposited.

Thus, the whole period of egg formation following ovulation covers about 24 to 28 hours. Checking the stage of egg formation in hens killed at varying intervals showed that the rate of egg passage in anesthetized hens was normal.

Two Eggs in Oviduct is Unusual

It is unusual to find two eggs in the hen's oviduct at the same time. If the hen is to miss laying for a day, the delay is in the release of the yolk from the ovary, and the process of formation takes place in the usual period. The manner by which egg shape is determined is not well understood, but it is evident that this takes place even before the membranes or shell are added.

Most soft shelled eggs are probably the result of premature expulsion of an egg. Double yolked eggs are most frequently the result of two yolks being released simultaneously from the ovary and passing through the oviduct at the same time. These two conditions occur most frequently in pullets when they first start to lay and before the mechanism of egg formation has become fully adjusted.

What Your Flock Will Eat

One often hears the comment, "You have no idea how much feed it takes to feed that flock; 100 pounds of feed lasts no time."

One should have some idea, because feed represents close to 60% of the total expense in operating a poultry enterprise, and adequate feeding is essential for successful results.

So here are the figures:

100 CHICKS WILL EAT

10 pounds of feed the 1st week
20 pounds of feed the 2nd week
30 pounds of feed the 3rd week
40 pounds of feed the 4th week

100 CHICKS WILL EAT

100 pounds the first 4 weeks
360 pounds the first 8 weeks
765 pounds the first 12 weeks
1,255 pounds the first 16 weeks
1,825 pounds the first 20 weeks
2,475 pounds the first 24 weeks

Now, perhaps you'd like to know how much feed it takes to make one pound of chicken:

To 8 wks.—3.5 lbs. of feed.
8-16 wks.—5.5 lbs. of feed.
16-24 wks.—9 lbs. of feed.

For larger birds, feed requirements are:

25 lbs. to feed 100 hens daily.
25 lbs. to feed a pullet to laying age.
60 lbs. to feed a turkey to market age.

Some variation from these figures may be expected in individual flocks, but they can be considered accurate enough for determining probable feed costs on growing chicks.

—H. H. Alp, Prairie Farmer, April 6, 1940.

A CERTAIN Mr. Jackson of Bangkok, Siam, knows that shipping eggs across the Pacific Ocean can be a costly affair.

About three months ago he ordered 16 eggs from Charles Foy of Clinton, Iowa. At first Mr. Foy decided to ship the eggs via air mail, but learning that the postage would be $83, he abandoned this plan. He finally sent the 16 eggs via air express. They were flown by the Trans-Pacific Clipper to Honolulu, Manila, Hong Kong and Bangkok, requiring 16 days for the trip. The bill came to $16. Foy decided that was enough to pay for eggs, so he just donated Jersey Black Giant hen fruit to Mr. Jackson.

—Poultry Supply Dealer, May, 1940.

POULTRY RESEARCH

Stability of Vitamin A

The loss of vitamin A from feed during storage for varying periods up to 34 weeks has been investigated. Three sources of vitamin A were employed: cod liver oil, alfalfa meal and crystalline carotene. The loss was complete when feed was stored 34 weeks in burlap bags at room temperature if the source of vitamin A was either cod liver oil or alfalfa. When carotene was used, the loss was complete after 18 weeks. —(Conducted by R. V. Boucher).

—Bul. 382, Fifty-Second Annual Report, Pennsylvania Agricultural Experiment Station.

Sulfur Feeding Unsafe in Winter

That it is unsafe to feed 2 to 5 per cent sulfur continuously in the rations of pullets kept behind closed glass windows, and that it is probably risky to feed sulfur in winter even when windows are kept open as much as possible, are the conclusions J. G. Halpin, C. E. Holmes and C. A. Herrick draw from a 448-day feeding trial with White Leghorns at the University of Wisconsin, and reported in "What's New in Farm Science," Wisconsin Bulletin 449.

Sulfur promotes vitamin D deficiency in birds kept out of direct sunlight, even if cod liver oil is provided. In the test at Wisconsin, sulfur-fed lots showed low egg production, poor shell texture in the eggs produced, poor hatchability and high death losses during winter months, in comparison with the control birds given no sulfur.

As far as is known, according to the investigators, there is little likelihood that chicks will develop any serious cecal coccidiosis if they are taken off sulfur feeding at about three months of age. There is a possibility that laying pullets may come down with another type of coccidiosis—the intestinal type—but that risk seems to be smaller than the danger involved in feeding sulfur during winter.

Potatoes as a Poultry Feed

Feeding raw potatoes did not have any saving effect upon the amount of mash consumed, according to tests conducted by R. Fangauf of the University of Kiel, Germany (German Archive of P. Science, Vol. 13, Nos. 10-11, 39). Evidently raw potatoes passed through the digestive tract virtually unutilized.

More satisfactory results were obtained from cooked potatoes, mixed with the mash and fed as a wet

mash once a day. Cooked potatoes have no advantage over potato flakes, as a constituent of the poultry diet; however, potato flakes are more palatable and keep better, hence, flakes appear to be the most economical way of utilizing (on a national scale) surplus and cull potatoes. Sixty grams (about 2 oz.) of cooked potatoes per day reduced production by 5 per cent, when compared with the test lot, receiving but one-third that amount of cooked potatoes.

—Carl H. Schroeder, Everybodys Poultry Magazine, April, 1940.

Riboflavin Affects Hatchability

Riboflavin aids hatchability. Graduated amounts of riboflavin, as supplied by molasses-yeast, were fed to White Leghorn pullets on all-mash rations in tests conducted by R. V. Boucher and H. C. Knandel at Pennsylvania State College. The results are reported in the Fifty-second Annual Report of the Pennsylvania Agricultural Experiment Station.

Hatchability increased as the amount of riboflavin in the ration increased. There were no significant differences, however, with respect to egg production, egg weight, feed efficiency, mortality, body weight or fertility.

Breeding for Interior Egg Quality

Although there was some evidence of interior egg quality being an inherited trait, efforts to establish lines of high and low interior egg quality through selective breeding were unsuccessful, according to the work of D. R. Marble, reported in Bul. 382, the Fifty-Second Annual Report of the Pennsylvania Agricultural Experiment Station.

No Seasonal Differences in Egg Shape

Analysis of data for the laying year of 1937-38 indicated that a seasonal trend or variation in egg shape does not exist. The procedure followed permits checking egg shape as soon as the birds begin to lay. Selection of two lines for the extremes of egg shape has shown that this character is definitely inherited. The frequency distribution curves for the data obtained in 1937 and 1938 indicate that distinct genetic lines have been established and that further attempts to develop lines showing greater differences probably will not be successful.—(Conducted by D. R. Marble).

—Bul. 382, Fifty-Second Annual Report, Pennsylvania Agricultural Experiment Station.

Fish Meal and Egg Flavor

Varying levels of fish meal in the rations of layers did not cause any off flavor in the eggs produced, according to E. I. Robertson and L. A. Wilhelm, Washington Agricultural Experiment Station, in the U. S.

Egg and Poultry Magazine for February, 1940.

Even when salmon fish meal comprised as much as 28 per cent of the ration, there was no evidence of off flavor in the eggs.

Because of the possibility that undesirable flavors or odors might develop in storage, eggs were collected after the birds had been on the rations for 60 days and then placed in storage at a temperature of 34 degrees Fahrenheit. No objectionable odors or flavors could be detected in any of the eggs, whether produced on the high fish meal rations or on the control ration, after 60 days in storage.

Effect of Grass Silage on Egg Yolk Color

Darker egg yolk color was observed when White Leghorns were fed silage as compared with fresh cereal grasses in a test conducted by Clarence L. Gish, Loyal F. Payne and W. J. Peterson at Kansas Agricultural Experiment Station, reported in Poultry Science, Vol. 19, No. 2. The feeding of molasses oat silage resulted in the production of "grass eggs" from 45.9 per cent of the hens. A total of 30.1 per cent of all eggs laid by hens producing "grass eggs," or 13.3 per cent of all eggs laid by all hens in the lot, were olive in varying degrees.

When the worst offenders were examined 30 minutes after feeding silage, their crops seemed to contain larger amounts of silage than other hens which produced no green eggs, thus leading the investigators to believe that the effect may be quantitative rather than qualitative. It is further suggested that the strongly adsorbed, oxygenated carotinoids in the silage combine with egg yolk proteins to produce "grass eggs."

Dark Yolks Cause Lower Grades in Marketing Eggs

The effect of yolk color on grading of eggs was studied at the Western Washington Experiment Station, Puyallup, Wash., and reported by C. F. McClary, assistant poultryman at that station, in Washcoegg, April, 1940.

Eggs from hens fed to produce dark colored yolks were allowed to cool overnight and were then placed in one end of a cooled case, while eggs from hens fed to produce light colored yolks were allowed to cool in the same environment over night and were then packed in the other end of the case. The cases were then placed in the coolers for four days, after which they were hauled to Tacoma, Wash. There, light yolks graded 89 per cent extras and dark yolks graded 77 per cent extras.

After being shipped to New York, light yolks graded 81 per cent Blues and dark yolks graded 38 per cent Blues. This down grading of dark eggs at New York was almost entirely due to greater visibility of dark yolks, according to McClary, as the interior quality and albumen heights were approximately the same for both light and dark yolk eggs from the same environment.

Cooling Cabinets Help Maintain High Egg Quality

The value of three different types of coolers for holding eggs was demonstrated at the Western Washington Experiment Station, Puyallup, Wash., during the summers of 1938 and 1939, and described by C. F. McClary, assistant poultryman at that station, in Washcoegg, April, 1940.

Eggs were gathered four times daily, immediately sorted into four groups, weighed and placed in wire baskets in the three coolers and in an open uninsulated feed room in the end of a poultry house. They were held there until the following morning when they were packed in cases which had been held in the same environment with them for 24 hours. The eggs were held for four days, then hauled to Tacoma, Wash., and graded. From 10 to 14 per cent more eggs graded as extras from the cooling cabinets than from the uncooled feed room.

The eggs were then shipped to New York. Loss of weight there was found to be 1.5 per cent for eggs from the uncooled room, compared with 1.0 per cent average loss in weight for eggs held in the coolers.

Into grades of least shrinkage at New York went 21 per cent of the eggs from the uncooled egg room, and 38, 44 and 46 per cent of the eggs from the three coolers. Tremulous air cells were greatest in eggs from the uncooled room. Albumen quality was better in all eggs stored in coolers than in the control group held in the uncooled room.

Marketing of Chickens, Turkeys and Eggs in Wilmington

Results of a survey of 200 households in Wilmington, Del., 20 of which are classed as "wealthy," 54 stores and 21 restaurants, made by Harry S. Gabriel of Delaware Agricultural Experiment Station, are reported in Delaware Bulletin No. 218.

Gabriel found little apparent competition between poultry and other meats, with consumers buying poultry regardless of the price of beef or pork. Most consumers wanted mature birds weighing more than four pounds. Wealthier households used an average of 3.7 chickens per month; households in lower income brackets used an average of 2.3 chickens per month.

Only 38.1 per cent of restaurants, 10.5 per cent of all consumers and 10.5 per cent of wealthy consumers used storage chickens.

Only 16 per cent of less wealthy consumers bought capons, compared with 60 per cent of wealthy consumers and 61.9 per cent of restaurants.

Ninety-four per cent of all consumers preferred heavy breeds. Few consumers were familiar with milk-finished birds. Few knew broilers could be obtained throughout the year. Only 4.8 per cent of restaurants, 30.9 per cent of all consumers, and 50 per cent of wealthy consumers used any canned chicken.

Average turkey consumption among all housewives was 3.8 turkeys a year, with wealthy housewives using 4.2 annually. Of all consumers, 56 per cent preferred to have turkeys drawn, while 45 per cent of wealthy consumers preferred birds drawn. Five per cent of wealthy consumers and 8.6 per cent of all consumers preferred live turkeys. Chief complaint of all poultry was that the birds were killed with full crops.

Nearly 90 per cent of consumers preferred local eggs; few used storage eggs. Restaurants used eggs regardless of price; consumers lowered egg consumption when egg prices were high. The average family in Wilmington used 10 dozen eggs a month. Forty-one per cent preferred eggs delivered in cartons. Only 8.8 per cent of all individual consumers preferred buying eggs by weight, while 37.5 per cent of all restaurants preferred this method. Most common complaint was the lack of candling out blood spots and meat spots.

Gabriel concludes that a good advertising campaign directed at the well-to-do residents of Wilmington and nearby cities would help in disposing of much more Delaware produced poultry.

Weights and Measurements of Parts and Organs of Turkeys

In a study covering the weights and measurements of parts and organs of standardbred Bronze turkeys, conducted at the Agricultural Research Center, Beltsville, Md., Stanley J. Marsden reports in Poultry Science, Vol. 19, No. 1, that live weight of males used in the study ranged from 19 pounds to 27.6 pounds, and live weight of females ranged from 10.1 pounds to 15.9 pounds.

Quantity of breast meat varied from an average of 11.63 per cent of dressed, undrawn weight in five abnormally narrow breasted males to an average of 21.97 per cent in four moderately broad breasted males. Average for normal males was 20.14 per cent, for normal females, 19.18 per cent.

Leg meat varied in quantity from an average of 16.92 per cent of dressed, undrawn weight in four moderately broad breasted males to an average of 20.84 per cent in five abnormally narrow breasted males. Average for normal males was 17.88 per cent; for normal females, 18.05 per cent.

Necks (without the skin) of nine males averaged 4.38 per cent of total dressed weight, and necks of two females averaged 2.75 per cent.

Pseudomonas Infection in Turkeys

Pseudomonas infection in turkeys and chickens is described by H. J. Stafseth, Walter Mack and J. F. Ryff, Michigan State College, in Poultry Science, Vol. 19, No. 2. Symptoms are droopiness and general depression often to the extent of coma. Some birds died without showing any symptoms. Chickens often moved their heads sideways in a more or less constant, rythmic motion. Wabbly gait and marked weakness were observed. Some birds showed ruffled feathers, lack of appetite and diarrhea, the droppings being thin, watery, and ill smelling, or yellowish white and sticky. Temperature went as high as the clinical thermometer would register, over 110 degrees Fahrenheit.

Post mortem showed dark, syrupy, coagulated blood even hours after death. In some birds, the liver showed small grayish or yellowish spots or streaks. Occasionally greenish areas were noted on the liver. Slight enlargement of the spleen was rather common. Congestion of superficial vessels was common; in birds that died in a few hours, this was about the only thing observed.

Turkeys are apparently more susceptible to this disease than chickens, according to the investigators. Possible causes are vitamin A deficiency and improper battery brooding. The high degree of susceptibility of mice suggests the possibility of rodents as spreaders of the infection. Future research on this disease is necessary.

Use of Copper Sulfate and Ferric Sulfate in Coccidiosis Control

The addition of a copper sulfate and ferric sulfate solution to the drinking water reduced considerably the coccidial oocyst discharge from lambs in Nebraska feedlots, reports John F. Christensen in the Journal of the American Veterinary Medical Association for April, 1940. This test was conducted with only a relatively small number of lambs, but it suggests the possibility of the use of a similar treatment in controlling coccidiosis in turkeys and chickens.

Vaccination for Coryza

The administration of three doses of avian mixed bacterin to a flock of 5-months old pullets, among which infectious coryza had been present for two months, did not have any curative effect on birds already infected nor give protection to the birds which were non-infected at the time of vaccination, according to J. R. Beach, University of California, in the San Diego Poultry Journal, Feb. 10, 1940.

The tests involved 810 White

Leghorn pullets. Mortality was relatively small in both the unvaccinated and vaccinated groups. Emaciation was quite pronounced among the birds at the start of the test, and the improvement in condition during the following six weeks was about the same for the vaccinated birds as for the controls.

Response of Pullets to Hormones

Pullets injected with comb growth-promoting hormones from the first to fourth day or fifth to ninth day after hatching did not give as marked a response to those hormones as cockerels of the same age, according to W. R. Breneman, of Indiana University, reporting in Poultry Science for March, 1940, Vol. 19, No. 2.

Furthermore, there was no clear difference in response between the combs of those chicks which received .125 milligram of hormone daily and those which received .25 milligram daily. After injections were stopped, combs continued to grow, but more slowly than those of cockerels similarly treated. After the twentieth day, the combs of injected pullets grew more slowly than those of control pullets given no hormone, indicating a possible hormone antagonism or the secretion of an estrogen by the ovary which counteracts the effect of the hormone in pullet chicks. Combs in the control pullets grew more rapidly than the combs of male chicks caponized at five days of age.

Effects of Crossbreeding Barred Rocks and R. I. Reds

Rhode Island Red males from a poor egg production strain were crossed with Barred Rock females of a good egg production strain at the New Jersey Agricultural Experiment Station for the three years, 1936 to 1938, inclusive. Results of this cross, reported by Fred P. Jeffrey in "Hints to Poultrymen," Vol. 26, No. 5, show that crossbred pullets were heavier than either of the standard breeds at 10 and 12 weeks of age. On the basis of a three-year average, the crossbreds were intermediate between the Barred Rocks and the Rhode Island Reds in body weight at 24 weeks.

Mortality up to 24 weeks of age averaged 9.9 per cent for crossbreds, 17.4 per cent for Barred Rocks and 12.9 per cent for Rhode Island Reds.

On the average for the three-year period, the hybrids produced 127 eggs per bird, compared with 171 eggs per bird for Barred Rocks and 108 eggs per bird for Rhode Island Reds. Laying house mortality for the three years averaged 43 per cent for crossbreds, 29 per cent for Barred Rocks and 33 per cent for Rhode Island Reds. Age at first egg was reduced by crossbreeding, but the hybrids were weaker in persistency. Egg weight at 10 months of age appeared to be significantly greater among hybrids than among either of the standard breeds.

Eggs produced by the crossbreds averaged 74 per cent fertile during hatching season over the three-year period, compared with 70 per cent for Barred Rock eggs and 63 per cent for Rhode Island Red eggs. Hatchability was 65 per cent for crossbreds, 62 per cent for Barred Rocks and 54 per cent for Rhode Island Reds.

Temperature Standards For Growing Batteries

Battery temperature studies, conducted by a Russian investigator, yielded some interesting results (Transactions U. S. S. R. Institute of Poultry Industries, Moscow, Vol. 3, 2, 38). Different groups of Leghorn chicks were subjected to different temperature levels up to 23 days of age; from then to 90 days of age the temperature was the same for all groups. The temperature levels ranged from 75 to 97 degrees Fahrenheit.

Here are the conclusions: The higher the temperature during the first 23 days, the lower the growth. The growth between 23 and 90 days also was influenced by the temperature during the first 23 days. The higher the temperature, the larger the primary sex organs of the males and the larger the combs. (Note by editor: This latter observation is a well known phenomenon. It finds its explanation in the fact that comb and wattles are the heat loss mechanism of chickens. The higher the temperature the greater the need for such a mechanism of large size. For the same reason, at high temperatures, mice will grow longer tails and rabbits larger ears).

High temperatures decrease intake of feed, but increase intake of water. As regards this one test, health and livability did not appear to be influenced by the range of temperature to which the chicks were subjected. Lower temperatures produced better carcasses. When constant temperatures (75; 82; 90; 97 degrees Fahrenheit) were used, a constant temperature of 82 degrees Fahrenheit from the first generally produced best results. Lowering the temperature during the day, increasing it during the night, was of no demonstrable benefit.

Under the conditions under which these tests were conducted, the results would suggest the following temperature recommendations: 1st day: 86 degrees; 2 to 5 days: 82-86 degrees; 6 to 10 days: 79-82 degrees; 11 to 20 days: 75-79 degrees; 21 to 40 days: 64-72 degrees; 40 to 60 days: 59-64 degrees; 61 days and over: 54-59 degrees Fahrenheit.

Such specified recommendations are undoubtedly subject to revision, depending upon the condition prevailing in each individual battery installation. Nevertheless, the results obtained by this Russian investigator are in general support the editor's observations and suggest that temperature standards for batteries are often too high and hence should be adjusted in a downward direction.

—Carl H. Schroeder, Everybodys Poultry Magazine, April, 1940.

Arsenical Grasshopper Baits No Hazard to Pheasants

It seems highly improbable that the commonly used arsenical grasshopper baits are of any danger to pheasants, on the basis of evidence secured by J. H. Lilly and reported in "What's New in Farm Science," Bulletin 449 of the University of Wisconsin.

Caged pheasants showed clearly they did not like grasshopper bait. Birds ate poisoned grasshoppers readily, however, and suffered no harm. Analyses of pheasants' tissues and droppings indicate they eliminate arsenic readily. One of a pair that consumed 5,190 poisoned grasshoppers over a 20-day period showed no abnormal concentration of arsenic in its tissues seven days after it stopped eating the grasshoppers.

It is concluded that these findings on birds starved into eating huge quantities of arsenic-bearing materials show how improbable it is that persons might suffer any ill effects from eating pheasants getting a choice of foods under natural conditions.

"Socialized Medicine" for Chickens

Under the title "Chickens Are Now Panel Patients," the following appeared in the Daily Mirror (London):

"Poultry are now 'on the panel'. Ailing fowls can be sent for medical treatment as often as necessary so long as their owner has 'stamped their cards.' If he has not, they become private patients and have to be paid for. The 'surgery' is at the Preston headquarters of the Lancashire Utility Poultry Society, first of its kind to establish its own laboratory to fight poultry diseases. The farmer who puts his birds on the 'panel' pays a yearly fee according to the size of his flock. Each bird then becomes insured."

—Lorraine Engel, U. S. Egg and Poultry Magazine, May, 1940.

AN ECCENTRIC thief, according to a news article, stole the wire fence from around Mrs. J. D. Williams' chicken yard at Concord, N. C., and left the chickens undisturbed.

Diary of a Poultryman

By PERCY S. WHITE

Wayne County, Ohio

Reprinted from Everybodys Poultry Magazine

May 1—Lady Luck smiled on me today; I smiled too, in fact, I laughed out loud, a regular horse laugh. This morning at 1 o'clock, I went out to give the chicks the once over and found a quarter of an inch of ice in the water barrel. Our supply pipe is laid on top of the ground as it is for summer time only. Of course, there was no possible chance of thawing a pipe a quarter of a mile long. I was a victim of circumstances. There was nothing to do but to wait until the sun thawed it. The vision of a $75 replacement charge loomed up before me like a barn in a fog. A geyser broke loose about 10 o'clock, but it was only a split coupling which evidently had been drawn too tight. Am I lucky? Well, I guess yes.

May 2 — "Hi there, old fellow," says I, as I took a long-range pot-shot at a crow, as he passed over the range. Greetings, salutations, and felicitations too, just as a reminder that the Old Man is once again in this neck of the woods. No tom foolery this year, I will shoot and we will talk about it later.

May 3—This has been one of the busiest days I have spent in many a moon — and accomplished the least. As a matter of fact, I haven't really done anything but take care of the chicks. First I took the eggs to the auction and rushed home to get food from the cold storage locker plant here in time for dinner. Kid White was short of rations. While in town I located a few flag stones (sand stones). I need a few to make a couple of walks around my new tenant house. The walks will be stepping stones, so little ones can be made from big ones. After dinner I took care of the chicks and then went back to town for the stones. Fred started cutting them. Donnie helped me do the night work with the chicks.

May 4 — It might be true that asbestos won't burn, but I saw it get so hot tonight that it set fire to the combination feed room and bunk house. I built a fire to take the chill off of the building before I went to bed and the first thing I knew I had a halo of smoke around my head. The asbestos behind the smoke pipe had become so hot it had set fire to the insulating material of the building.

If I had been asleep I probably

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(Everybodys Poultry Magazine, May 1940)

would have been caught in a fire trap, a human incinerator so to speak. Fortunately, I had the gasoline lantern burning and a full water barrel outside. The supply faucet for the barrel had just been turned off so I was really sitting Jake for a fire. I will replace the asbestos and I will keep the water barrel full in the future.

May 8—A check-up on the chick mortality to date shows 1.5 per cent. That is not bad brooding, says I. But here is knocking on wood. In fact, I should step out here in the edge of the woods and beat on a large white oak stump with a sledge hammer. Disease and varmints haven't had their chance yet. It is just a plain statement of numerical fact that the less I lose before they are exposed to the hazards of the range, the more chicks I will have to expose to those hazards. But here is hoping, and hope springs eternal in the heart of chicken folks. Yes, I hope; I hope; I hope.

May 11—I wonder why it is that I get so methodical about the work that I can't get out of the old rut? For a couple of weeks there has been a large piece of a tree root directly in the path up to No. 1 house and I have stumbled over that root time after time. I have stumbled over it for the last time, for when I fell today with two buckets of water, my patience was exhausted. I made a special trip to the bunk house with that root. It is now burning in the stove. The door is wide open; it makes heat.

May 12—There are some slick varmints in this area. Last night something removed the bait from the big trap and didn't even spring it. Tonight we reversed the trap, figuring the animal was coming in from the north and pulling against the trigger. If this theory is right, something ought to be doing between now and daybreak. An exploring paw is going to get caught if it exerts any pressure. If the paw gets caught, it is going to stay put whether the animal does or not. These are the most powerful traps I have ever seen. Donnie and I go together when they are baited, just in case there should be an accident.

May 13—Donnie came out on the range this morning and informed me that we had caught the last one of our barn cats in the big trap. It is the irony of fate, trying to catch the neighbor's cats and to catch our own. But what I can't understand is why that cat was a half mile from the barn. It had an exploring nose instead of a paw for it was caught by the neck and was deader than a door nail.

May 15—I think Donn White was the most dumbfounded boy in Plain Township this morning when he saw our cat stroll out of the barn door. We caught the neighbor's cat after all, although no one has squealed yet. There is going to be a general uprising around here before long, for we caught a big Tommy Tiger cat last night. It was a coincidence that Donnie happened to be taking it to the incinerator when he saw our cat.

My egg quality is running high, but the general trend for the auction is lower. This is evidently due to the fact that so many producers have been furnishing hatching eggs. The birds have probably had free range and plenty of grass. Then too, the owners have probably been negligent in handling their eggs.

May 16 – The weather has been too cold and raw to turn the chicks out doors. I would rather have them a wee bit crowded in the houses than standing around outside chilled well nigh to the marrow.

May 18—I have a one track mind. This afternoon I was behind time for some reason or other. It happens that way on this ranch quite often. In trying to make up for lost time, I was carrying water on both shoulders, so to speak, a bucket of water in one hand and a bucket of oil in the other. They didn't mix when I poured the water in the brooder stove oil tank. Neither will the combination burn.

Donnie happened to come home from school a little early, examination week, so I spent the rest of the afternoon cleaning out the oil tank. Everything was lovely. After supper the stove wouldn't percolate, so I spent half the night getting the water out of it. Now the goose is hanging high once again.

May 19 – Turned the chicks that are in the bended bow rafter brooder houses out doors after dinner. About 2 o'clock a cloud-burst hit this area, and were they bewildered? And was I wet? We went 'round and 'round, first one side of the house and then the other. Then a gang would dash over to a spruce tree, next to a pine, then around the house again. Finally all were inside; the sun came out; I stood there wet to the skin and wondered "what fools we mortals be."

May 20 – Gold Dust, my good Jersey cow, has a big bouncing baby boy. I promised this calf to Nancy Jane, the wee one of the two young Americans in the family. She also has "Jackie Boy" a ewe and Jackie's twin lambs. In addition she has the "Drake" and "Donald Duck" who at present happens to be sitting on 12 eggs. Around this ranch it is impossible to tell the sex of an animal by its name. Last year Donald had a whole brood of ducklings.

Had a little trouble with picking in one of the brooder houses this afternoon. Quick action with the red salve saved me a bunch of grief. I treated the picked ones first, then caught some of the others at random and gave them a shot too. It didn't take long for them to realize that it was a poor policy to pick anything red.

May 26 – Howard Cobbler, boss carpenter, stopped last night to say that there would be a gang of carpenters here this morning. There is no question about them being here from all the beating and banging that is going on around the house. This front porch office will be finished in black sweet cherry with a walnut wainscoting, all finished in the natural color. I bought the cherry and walnut trees last winter, had the lumber sawed, kiln dried and worked. The floor will be oak. Two French doors will replace the front door and a pair of windows. Thirteen sash will be across the east, south and west ends of the office. There will be light. That is what I need—to be led towards the light. If I make many more improvements on the ranch, I will need more light on this chicken business.

May 30—Well, it has reached that point when the routine schedule will have to be changed. All chick feeding is being done outside, only the water and the chicks themselves using the house. So in order to keep them from devouring one another I let them out at daybreak. And daybreak is about 4:15 a.m.; that is early. Hither-to-fore I have been going to bed around midnight, which practice will have to be stopped forthwith. The days are too long or the nights are too short, anyway there is not enough time for any shut-eye. It seems to be necessary for me to get some sleep, but the big idea now is to find the time.

Keeping Layers Cool in Hot Weather

Many schemes were tried to keep the birds from suffering during the last year's heat wave in California. Canvas awnings were sprinkled frequently during the day, roofs were sprayed with water, yards were wet down, floor litter was sprinkled, in some cases the birds were given the same treatment. Although turkey growers had less trouble, some experienced losses. The fallacy of solid plantings of sunflowers was demonstrated. Strip plantings are much better because there is more circulation of air birds seek shade and are divided into smaller groups, and there is less tendency for them to become panicky and pile up.

—D. M. Rutherford, Pacific Rural Press.

Greenbacks from Green Pastures

By E. Y. SMITH

Cornell University

Condensed from Turkey World

TO many people, the turkey range is merely an exercising lot, and a means of lessening the dangers from parasites and disease, but to others, it is also a means of a better quality production at a lower feed cost.

There are many differences in opinion among farmers who have made a consistent use of pastures as to what type of pasture is best. One uses soybeans and believes that it is the answer to the pasture problem; another has used rape during the past few years and is 100 per cent satisfied with it; another uses alfalfa, in order that it may be cut for hay during two years of the three-year rotation, when the turkeys are ranged elsewhere; and still others are happy from the results from a seeding of 6 lbs. bluegrass, 6 lbs. rough-stalked meadow grass, 6 lbs. perennial ryegrass, and 2 lbs. ladino white clover. Recently, we have had some excellent reports from clear seedings of ladino clover.

No One Best Seeding

There is probably no one best seeding under all conditions. Each grower must use the range crop that will give best results under his conditions of climate, soil and other environmental factors. Regardless of the kind of crop grown, however, practically all green forage crops will pay a profit, if correctly used.

More mistakes are made in the care and management of permanent pastures than in getting them started. Some pastures are overstocked, with the result that the seeding is killed and the soil made bare. In some instances, a pasture may be understocked and not clipped frequently; hence, the grass matures, becomes tough, unpalatable, indigestible and, consequently, its function as a pasture is of little importance. The third mistake commonly made is leaving the feeders and fountains on one place, or moving them too frequently. When this is done, the birds range near the hoppers, kill the forage around the hoppers and permit it to mature and become useless as a source of feed over the other parts of the field.

Move Range Equipment Often

Best results have been obtained when the correct number of birds have been placed on the range. This number may be anywhere from 100 to 200 turkeys per acre, depending

Poultry-Dairy Publishing Co., Inc., Mount Morris, Ill.
(Turkey World, April 1940)

upon the type of seeding, fertility of the soil, care of the pasture, and the weather conditions. The hoppers and fountains should be moved as frequently as needed—often once a day. By this means, the poults cover more of the land, keeping the forage low without killing it out in spots. This practice increases the total production per acre. It also produces a continuous source of young green forage, which is higher in protein and total digestible nutrients, in addition to the increased palatability.

Less Chance for Disease

Frequent moving results in better distribution of manure which will serve the dual purpose of better fertilization of the soil and scattering of disease-producing organisms. Some growers find that by keeping their turkeys on the move they can come back to the same range the following year without much danger of disease, due to the fact that so little contamination resulted from previous use. Turkeys are great consumers of young grass, but do not utilize hay or mature grasses to an advantage.

Crops frequently clipped at Cornell have been made to yield from two to three tons of dry matter per acre of pasture that has contained approximately 30 per cent protein. Dried skim milk contains only approximately 34 per cent protein. Young green forage (not over 4 inches in height) contains as much protein pound for pound as liquid skim milk.

Careful planning will make it possible for most growers to have grass available during the entire year. Good alfalfa sod or other sods will usually accomplish this, but growers who must depend upon annual crops will find a fertile field of possibilities.

Rape, perhaps, provides the greatest quantity of succulent green feed in the shortest period of time. The soil should be prepared as for corn. Dwarf Essex rape usually gives best results and should be sown at the rate of 5 to 8 pounds per acre. Sow a little oats with it, as the oats will provide additional green feed. Rape requires plenty of moisture and may not provide green feed throughout the hot late summer months.

Soybeans Favored by Many

Soybeans represent the favorite range crop for many growers. The beans should be drilled and allowed to reach a stage of heavy foliage. If planted in this manner, instead of in rows, the turkeys will not trample them down, but will eat the vines completely as they go.

Sudan grass, popular in some sections, stands drought well. It is usually planted about 10 days after the usual date of planting corn. About 15 lbs. per acre is the usual seeding rate. If the first growth becomes too rank, it can be cut for hay. The resulting second growth will be green and tender when needed.

Other grasses, such as oats, wheat, barley, rye, corn and the sorghums are often thickly planted for pasture.

Some growers sow rye in early fall, in order to have green feed available when practically all other greens are frozen and have ceased growth. Rye will also provide the best source of early spring greens in most sections of the country.

Pastures Lower Feed Cost

Poultrymen in New York State have claimed a saving in the feed cost of raising pullets of from 20 per cent to 25 per cent. Turkey men have estimated savings that range from 25 per cent to 40 per cent in the feed cost of producing turkeys. Data from the Kansas Experiment Station indicate a saving of about 35 per cent in the feed cost of producing turkeys.

Grow More Grasses

According to a story in TIME, when Nebuchadnezzar, the Babylonian king, ate grass, he wasn't too far off his trolley at that. A group of chemists from Kansas City after four years of analysis and experimentation have reported to the American Chemical Society that grass contains all the vitamins except D and they have indicated by inference, at any rate, that maybe poultry men have long overlooked a good bet in growing young stock.

Grass is said to have "23 times more Vitamin A than carrots; nine times more Vitamin B1 than leafy green vegetables; 22 times more Vitamin B2 than lettuce; 14 times more Vitamin C than tomatoes and citrus fruits;" and there is also the antisterility E plus what it takes to make pullets lay more eggs. To cap the climax, it appears that grass is good for humans as well as hens.

—Wm. F. Kirkpatrick, Storrs Laying Contest Press Bulletin, April 20, 1940.

¶¶ PAT RUPP, turkey breeder and grower near Turlock, Calif.. has patented a simple door for turkey laying nests, which prevents piling up and breaking eggs.

Two laths forms a sort of yoke through which the turkey hen pushes as she goes into the nest, two more laths set at right angles turning into place to make a door behind the hen while she is laying. He has something like a half mile of these "don't disturb" nests.

—Pacific Rural Press.

Probable Trends in Turkey Production

By H. L. SHRADER
U. S. Department of Agriculture

Condensed from U. S. Egg and Poultry Magazine

IN speaking of the last two business decades, someone has described them as the roaring "20s" and the disappointing "30s". In turkey production, we cannot accurately say that the quantity raised was exactly disappointing. We started the 1930 decade producing a few less than 20 million birds per year and ended the period with over 30 million birds raised per year.

The long-time trend in prices has been downward, but they have risen somewhat above the low point reached in 1932. However, we cannot look at this trend from just the price of turkeys — the price of feed plays a large part in the farmers' calculations. Even though the "turkey-feed" ratio in 1939 was slightly less favorable than in 1938, many farmers still found their turkey enterprise furnishing a satisfactory share of the farm income. Since they made money in 1939, they are going to raise turkeys again in 1940, possibly not a record breaking number, but still plenty of turkeys.

Farmers Not Pessimistic

The farmers as a whole are not so pessimistic on the turkey deal as the packers and speculators who own birds in cold storage.

Commercial turkey farms are becoming a more important part of the turkey deal each year, but most of the turkeys are still raised by producers whose flocks are relatively small. Such growers who marketed early had a good income. They may even increase. The commercial producer with thousands of birds, may not like the outlook for an increased feed cost and may decide to reduce his operations.

In 1936, we had 26 million turkeys. The following year the quantity was reduced only a little over a million birds and the production has been increasing since that year.

Shift in Producing Centers

A geographic shift in centers of production is very evident. This is coupled with modern scientific findings and modern transportation facilities. The incubator manufacturer has turned out a machine that can hatch turkey eggs. Poultry research workers have developed a sanitation system that increases viability. Transportation corporations move large numbers of hatching eggs and poults with uncanny safety. Early season hatching eggs are now produced in the warm valleys of Texas and California and the resulting turkeys are raised largely in the Corn Belt or near the eastern market.

The state of Iowa has shown remarkable increases in turkeys raised —some of the eastern states with smaller area and volume have shown an almost fabulous percentage gain. Turkeys from the dry-land farming and mountain region of the western states now compete in almost every market with birds produced nearby. Big heavy toms produced in California are sent to New York via freezer storage through the Panama Canal to compete for their place in hotel and restaurant trade.

There seems to be no way to forecast this geographic shift or to nominate the area that will prove the most efficient. The Corn Belt with its abundance of low-price feed will always be an important factor in this new era of turkey production.

Trend Toward Higher Quality

Trends in marketing have been toward higher quality. Government grades of turkeys have become fairly well established. Registered trademarks and brands are being promoted by modern advertising methods. The turkey is becoming a "year around" bird instead of a special feature to grace the holiday season.

With the increase of the turkey population, another class of turkeys is being merchandised—the "breeder hen." In years past, we seldom saw wholesale lots of fresh killed turkeys during the months of May or June. Today, as soon as the last setting of eggs is gathered from the hens, these birds are dressed and sent to market. I was in one plant in Iowa last spring that was putting two carloads through the dressing plant to be used as a special feature sale for Decoration Day.

The use of incubators has made it possible to start fully finished turkeys to market at a much earlier date. Carloads of fresh dressed, prime grade turkeys were available as early as August last year and the September sales volume showed considerable increase. I know of one eastern producer who always has a special lot mature for his Easter trade. Such birds are a factor in the disposal of cold storage holdings and in time may play an important part in the question of freezer storage.

A few turkeys are merchandised by the packers who specialize in the full-drawn, quick-frozen process. More birds are being handled by the cooperative and semi-cooperative pools. In the latter type of marketing the packer makes an advance payment and takes title to the birds, then makes full payment after the stock is sold and all expenses deducted. The turkey producer is learning more about the necessity of

Institute of American Poultry Industries, 110 N. Franklin St., Chicago, Ill.
(The U. S. Egg and Poultry Magazine, April, 1940)

marketing only fully finished birds.

Coupled with the quality demand has come a change in breeding. Because of the demand for small-sized turkeys the lighter breeds have gained in popularity. The popularity of the utility and dressed-bird classes in the turkey shows has brought more attention to the conformation of the body, especially the fleshing of the breast. Some of this interest has been at the expense of the fine points in feathering. Within the last few years a "meat type" or "broad breasted" strain has been popularized. Since this is a large-sized bird, the question of paying a premium price for the small sizes has become more acute. This difference was most pronounced at the Thanksgiving and Christmas markets last year and ran as much as four to six cents per pound. Some of the large chain stores advertised a different price for large and small birds. The modern turkey breeder must keep in mind the size of the strain he wishes to develop.

Feeding Methods Improved

A large amount of research work has been done in regard to the feeding of turkeys. The growing needs of an animal that gains as rapidly as a turkey have called for special nutrition studies. The folklore used in grandmother's ration has been replaced with percentages of protein and units of vitamins. The feeding of layers has helped to secure a greater number of hatching eggs.

The turkey still holds its place as a very efficient farm animal and produces a pound of gain for 4.3 pounds of feed. It will grow to maturity in 24-26 weeks and requires no more care during the brooding period than the chicken. The American public likes its turkey not only from a sentimental standpoint, but from a flavor and good eating viewpoint.

IN CERTAIN sections of central Europe, turkey raisers own no breeding males. When broody hens are seized by the maternal urge, their owners requisition the municipally-owned community tom.

—Turkey World, April, 1940.

ANOTHER possibility for smoked poultry meat. In Butchers' Advocate we came across this item:

"One of the meat markets is introducing a new item, smoked capon, prepared at a local poultry farm. The owner of the shop says it is even better than smoked turkey . . . tenderer and slightly milder in flavor."

—Lorraine Engel, U. S. Egg and Poultry Magazine, May, 1940.

His Turkeys Roost High

Turkeys like to roost high, and Glen Golden, Steuben County, Indiana, caters to their whim by providing roosts 9 feet from the ground where the birds are out of reach of thieves and animal enemies. He has flood lights at the ground to shine on the roosts, and turns these on if the big flock is stampeded. Several times in one year birds have left their perches and scattered in all directions. Once a cat caused the scare; another time it was a broken roost. Each time birds came back to the lighted spot and flew to the roosts again.

Golden has no screens under his roosts, but he can drive under them to clean up droppings and haul them away. His turkeys spend little time on the ground at the roosting site, which is near the farm buildings. They are trained to come up from feeders and waterers 100 rods away to roost. They fly up as soon as they arrive, and hustle away to feeders at daylight.

—Capper's Farmer, May, 1940.

Geese Clear Grass from Between Cotton Rows

On the Matthews estate in Scott county, Missouri, Foreman Wade Tucker uses more than 1,000 geese to destroy grass between the rows of cotton and has found the practice successful for several years. Turned into the cotton early the geese pick steadily until 10:30 a. m., then make for shade until late afternoon before getting back on the job. The geese are said to follow a row clear to the end without turning and without even stopping for a word of gossip.

—Missouri Ruralist, April 13, 1940.

Prevents Feather Picking in Turkeys

I have been using corn fodder successfully for feather picking. My sun porch is enclosed with 2 by 4-inch welded wire fabric so the birds can reach through. I use corn fodder because I can get it early. I set it against the outside of the sun porch. The turkeys will amuse themselves tearing it apart and forget feather picking.

—E. L. Brown in Turkey World, April, 1940.

EIGHTY-FIVE THOUSAND dozens of eggs are consumed annually in Canadian National Railway's dining cars, according to a newspaper report.

VIEWS OF THE EDITORS

Why This Ignorance About Our Products?

The need for a national consumer educational board for the egg and poultry industry is particularly apparent when we consider the evident lack of fundamental knowledge on the part of consumers as to our products. An article on EGGS in the April, 1940, issue of Consumers' Research Bulletin is evidence of this lack of general knowledge. In this article an important reason for keeping eggs cool was given as the health hazard resulting from the development of the microorganism Salmonella pullorum in warm eggs.

The tragedy of this is that such misinformation is reaching thousands of consumers.

—E. B. Heaton, U. S. Egg and Poultry Magazine, May, 1940.

American Eggs—or Chinese?

The federal government has been buying eggs and distributing them to people on relief. The purpose has been to give good food to those who need it and, at the same time, to keep up the price of eggs for the benefit of everyone in this country who has eggs to sell.

People on relief are pleased because they have been getting some fine eggs. And producers are pleased because it looks as if they are getting a higher price for their eggs as a result of the government's purchases.

I don't doubt the government's good intentions.

But it doesn't make sense to me for the Federal Surplus Commodities Corporation to buy American eggs to support the market, while food manufacturers in this country import eggs from China.

And they are beginning to do it. Last year in February only 7,400 pounds of dried egg yolks were imported. This year 174,000 pounds were brought in! That still isn't enough to have much effect on the market, but when you compare it with the amount imported last year, you can see the significance of it.

People in this country who put up frozen and dried eggs are watching figures closely and if the imports continue to increase, the demand for American eggs will be just that much less.

I understand one food manufacturer, who every year uses the yolks from seven and a half million dozens of eggs, is waiting to see whether he can afford to buy American eggs or will have to use Chinese eggs. He naturally prefers to buy eggs produced in this country and is willing to pay a little more for

them, but if the difference in price becomes too great, there is nothing for him to do but buy eggs from China.

Whatever we may think of the government's relief policy, its agricultural policy, or its tariff policy, we at least expect it to be consistent. If it is going to spend money to support the egg market, then certainly there should be restrictions to keep foreign eggs on an equal basis.

I don't understand all the whys and wherefores of the reciprocal trade agreements, but I do think it's time the different branches of the government concerned with this matter got together.

—Frank Priebe's Weekly Letter to Poultry Raisers, April, 27, 1940. Copyrighted.

Egg Cases and Eye Appeal

It seems to us that here in the Northeast we are ideally situated for producing and marketing top quality eggs. In probably no other section of the country is as large a proportion of poultry feed used commercially manufactured. Controlled feeding makes for greater uniformity of egg quality.

We are near the large centers of population — the people who buy eggs. It doesn't have to take long between the laying of an egg and its arrival on the breakfast table in one of the larger cities. At the most, an overnight haul is all that is required from almost any place in the Northeast to put eggs into one of the larger markets.

Yet in spite of these advantages, prices during the past month or so would indicate that buyers see very little difference in the quality of eggs produced in the Northeast over those that come out of the Midwest. True, early spring eggs of farm flock origin, because of favorable temperatures, are of much better quality than when the weather becomes warmer, but this doesn't seem to furnish the complete answer.

Might it be that we in the Northeast have overlooked the importance of eye appeal in packaging our eggs? We perform all the steps of producing a quality egg — good feed, frequent gathering, quick cooling, frequent marketing — but we turn around and put these eggs in cases that may be broken, marked with scribbling and plastered with labels from all parts of the country.

The manager of one of the eastern egg auctions revealed recently that the quality of second hand egg cases in the past few months was the poorest in six years. He cautioned his members to watch the cases closely, advising them to nail up loose sides and bottoms and also to remove torn flats and fillers.

To what extent damaged and soiled egg cases handicap the eastern egg in the markets during the period of flush production, we do not know, but with modern packaging playing so important a part in the sale of all kinds of foods and merchandise, we can't help but feel that quality eggs packed in clean, sound cases will bring more on the market.

—Everybodys Poultry Magazine, May, 1940.

Against Patman Bill

Secretary Wallace of the Department of Agriculture recently wrote the Chairman of the Committee on Ways and Means (Doughton) opposing the graduated Federal tax on chain stores which, in the opinion of many people, would drive the chains out of business.

The position of the Department of Agriculture is undoubtedly based on their experience under the Food Stamp Plan, where they have been able to make a study of food distribution and the great efficiency with which foods are being handled from the farmer to the consuming public.

Mr. Wallace's position may also be based on wide-spread opposition to the Patman bill from the farmers and their farm publications. Farmers and editors are fundamentally conservative in matters of business and taxation. They agree that certain evils exist that should be regulated. But, as Mr. Wallace says: "It would be unwise to give up the economies which have been brought about by chain store distribution in order to prevent certain practices not in the public interest."

We endorse Mr. Wallace's position when he concludes: "Sound public policy requires that we promote efficient methods of marketing and distribution, rather than discourage them or prevent them by taxes such as those provided in the Patman bill."

The supporters of the bill, on the other hand, to prove that they are not interested in driving the stores out of existence, have announced some liberal amendments which cut the tax in half and exempt any group that has less than 50 retail stores.

Hearings on the bill started on March 27 and were scheduled to continue for six weeks. Washington gossip has it that the bill will be talked to death, with no action this session. Too much political dynamite, either way.

—Poultry Item, May, 1940.

Good Year Ahead

On the whole, it is believed that the output of chicks in U. S. this year, will show a sum total at the end of the season, rather lower than last year. It seems that every business has high and low tide, commonly called business cycles. Horses and building swing in 17 year cycles, hogs in short cycles, the textile industry in 2 year cycles, and now that the day-old chick business has grown old enough to chart its course, it appears to have an upward swing of 2 good years, followed by 1 year of much smaller chick output.

This periodical contraction in rearing operations, puts the producer in a stronger profit position, and lays the ground work for the subsequent expansion of next year and the year after that. It makes 1940 look better for the egg and chicken people who will have them to sell.

—Frank L. Platt, American Poultry Journal, May, 1940.

Steam Aids in Cleaning Eggs

I've found steam a necessary adjunct in cleaning eggs. With steel wool, it helps to take the stain off, eases the removal of any crust, also takes it off in the form of dry dust, not a smudge, unless overdone. The steam method does not smear.

The use of steam allows the egg to be held easily, thus reducing the possibility of cracking due to pressure exerted in holding the egg firmly when rubbing with the wool. The steam also allows the wool a longer life. A pound of No. 3 grade used to last me about three weeks. With steam it lasts about two months.

The bare wool was pretty bad on the fingers, but since I use a "handle" of my own design, cleaning eggs is not only a labor of love, it's a sport!

Since cleaning must be done on the farm, assembly of a "kit" for cleaning with steam may be interesting to any producer who is interested in a level in the prices he has to have to squeeze out a profit. If all eggs were cleaned to remove the smell, household refrigerators would hold eggs longer without smelling up, or the storage warehouse people would be particular when they buy the dry-cleaned eggs.

This steam method is surely a "dry method" as the steam "condenses" in a very thin layer, and is rubbed off absolutely dry. It cannot soak in or dry off on the shell unless the operator is very careless. The way the steam eased the work certainly was a surprise to me.

—M. R. S., Poultry Item, March, 1940.

WHEN it comes time to select the candidates for egg laying tests, we floor-pick by appearance—physical characteristics and condition—and then check the trapnest record of the bird and her sisters. We like birds showing a three, four, or five-day egg cycle, 21 or 22-ounce egg size, and a bird which shows an increase in body weight during this period. You have to use all the "hen sense" you possess and then send them off with a prayer and blessing that nothing adverse will happen.

—H. S. & M. E. Twichell, New Hampshire Breeder, March, 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens Per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	Mar. 1	Apr. 1	Mar. 1	Apr. 1	Aggregate Jan.-Apr.	Mar. 1	Apr. 1	Aggregate Jan.-Apr.
North Atl.									
1929-38 (Av)	96.9	93.0	90.0	41.8	55.9	156	38.9	50.2	145
1939	98.4	94.2	89.1	48.2	58.0	177	45.4	51.4	166
1940	97.2	92.9	88.3	47.4	55.4	172	43.9	48.8	159
E. N. Cent.									
1929-38 (Av.)	108.8	104.5	101.7	37.1	54.1	137	38.9	55.3	144
1939	107.3	103.4	100.2	41.3	56.1	156	43.0	56.2	162
1940	110.8	106.6	101.7	40.9	52.8	148	43.9	53.8	158
W. N. Cent.									
1929-38 (Av.)	118.8	114.0	112.7	33.5	51.8	121	38.5	58.4	139
1939	113.1	110.2	107.5	35.2	55.7	141	39.0	59.7	156
1940	118.6	118.1	113.3	35.7	51.8	129	42.5	58.8	151
South Atl.									
1929-38 (Av.)	58.9	56.2	53.9	41.9	52.0	144	23.6	28.0	81
1939	59.9	56.2	53.1	47.5	54.8	161	26.4	28.9	90
1940	59.9	58.7	56.3	44.7	52.6	151	26.2	29.5	87
South Cent.									
1929-38 (Av.)	65.0	62.2	58.8	41.3	53.2	138	25.7	31.2	85
1939	63.6	61.6	59.0	43.7	55.8	152	27.0	32.8	93
1940	65.8	62.9	59.9	39.5	53.8	134	24.7	33.1	85
Western									
1929-38 (Av.)	73.2	70.9	68.6	44.3	57.2	155	30.6	38.8	107
1939	72.6	69.0	67.1	44.6	58.6	168	29.6	39.3	114
1940	73.7	69.7	67.3	48.0	59.1	169	32.3	39.5	115
United States									
1929-38 (Av.)	84.5	81.0	78.4	38.4	53.5	137	31.3	41.8	111
1939	82.8	79.8	76.8	41.4	56.3	154	33.3	42.9	123
1940	85.1	82.6	79.0	40.7	53.6	144	33.4	42.4	117

Farm production of eggs during March totaled 4,566 million compared with 4,551 million in 1939 and 4,493 million in 1938. The increase over the same month in the past 2 years is attributed to the larger number of layers, as production per layer was smaller. Total farm egg production in March this year exceeded the 10-year average for March by a very slight margin. The increase in total production over March a year ago was greatest, about 10 per cent, in the Far West where there was an increase both in layers and in rate of lay. The increase in total production was 3 per cent in the West North Central and South Atlantic States. There was a loss of 1 to 2 per cent in the North Atlantic and East North Central States and of 5 per cent in the South Central States, due mostly to the lower rate of lay per hen.

Farm flocks during March carried an average of 317,907,000 layers, or about 3.8 per cent more than in March last year, and practically the same

as the 10-year (1929-38) average March holdings. The decline from January numbers was about 4.1 per cent, compared with 4.9 per cent in 1939 and with the 10-year average decline of 5.2 per cent. Decreases below January numbers were least, 2 per cent, in the West North Central, and 3 per cent in the South Atlantic States.

Practically half, or 49 per cent, of the total layers on April 1 were in the North Central States, 29 per cent in the South, and 22 per cent in the commercial areas of the Northeast and the Far West.

Egg production per layer on hand during March averaged 14.36 eggs for the month, compared with an average of only 9 eggs during February and of 7.25 eggs per layer during January. March production per layer this year was materially less than either the 14.86 eggs estimated in March last year or the 15.39 eggs for March 1938. The decrease of about 3.4 per cent in rate of production from the March production of last year and of almost 7 per cent from March 1938, is due mainly to the late cold spring this year. The decrease from last year in rate of monthly production was from 3 to 6 per cent in the North Atlantic, East North Central, South Atlantic, and South Central, but the West North Central and Far Western areas show 3 to 6 per cent increases. The highest average monthly rate per layer during March was 16.63 eggs in the Far Western States and 16.12 in the North Atlantic States, both of which are areas of intensive commercial production. The lowest rate was 13.40 per layer in the West North Central States while it was 13.61 in the South Central States where the spring is somewhat more advanced than further north. March production in the South Atlantic States averaged 14.22 eggs per layer and it was 14.36 eggs per layer in the East North Central States where the industry is more highly commercialized but spring is not so far advanced.

The recovery during the past 2 years in the size of laying flocks has brought April 1 numbers of layers back close to the 10-year (1929-38) April average of reported numbers. The average number of layers reported in farm flocks on April 1 was 3 per cent greater than last year on that date; the number on March 1 was 3.5 per cent greater and on February 1 was 2 per cent greater than a year earlier. These fluctuations reflect the somewhat closer culling of flocks during January and March and the lighter culling during February, resulting from the sharp changes in egg prices during the past 3 months. The net decrease in number of layers since January 1 has been 6.1 birds or practically the same as last year and the 10-year average. This small variation shows the reluctance of poultrymen to part with layers during the period of rapid seasonal increase in rate of laying per hen leading up to the spring peak of production in April and May, except for the necessary culling to remove failing or unpromising birds from the laying flock.

Most of the increase in number of layers over last year is found in the West North Central and South Atlantic areas, where the increase is from 5 to 6 per cent. The increase is about 1.5 per cent in the East North Central and South Central areas, and only 0.3 per cent in the Far West. In the North Atlantic area, layers are about 1 per cent fewer than last year. Compared with the 10-year average number, increases are reported of about 4.5 per cent in the South Atlantic, 2 per cent in the South Central, and 0.5 per cent in the West North Central States. The North Atlantic and Far Western States show 2 per cent fewer, and the East North Central States the same number of layers per flock as for the 10-year average.

As a result of the unfavorable late spring both the rate of lay on April 1 and the seasonal increase in rate from March 1 were less than usual this year.

The seasonal gain over the March 1 rate was only 12.9 eggs per 100 hens, compared with 14.9 last year and a 10-year average gain of 15.1 eggs for that period. The reported production of 53.6 eggs per 100 hens on April 1 was also sharply down from last year, when 56.3 eggs were reported on April 1, and was only a tenth of an egg greater than the 10-year April 1 average rate of 53.5 eggs per 100 layers. The rate was lower than last year's April 1 rate of lay by from 2 to 4 eggs per 100 hens in every major geographic area except the Far West where a half egg more per 100 hens than last year was reported.

—Comment from U.S.D.A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Receipts of eggs at Central Western packing plants are still showing increases each week, as has been the case since the early part of February, though these weekly increases have recently shown a tendency to taper off. While the quantities of eggs received during the calendar year up to the first week in April were less than in corresponding periods of 1939, the reverse is now true. For the two weeks ending April 13 and April 20, the increases over the corresponding weeks of last year were 22 and 27 per cent, respectively. Packing plants in Washington, Oregon and California are continuing to receive more eggs than in 1939, although the week-to-week comparisons indicate that the peak is just about reached, if not already passed.

Receipts of Eggs (Cases) at 4 Markets*

Geographic sections	March 1940	March 1939	% change	Jan. to Mar., Inc. 1940	Jan. to Mar., Inc. 1939	% change
New England	46,153	39,808	+ 15.9	145,235	115,735	+ 25.5
Middle Atlantic	220,932	225,834	− 2.2	557,935	556,797	+ 0.2
South Atlantic	38,034	52,067	− 27.0	69,374	93,371	− 25.7
East North Central	328,399	344,622	− 4.7	716,337	736,354	− 2.7
West North Central	897,833	831,342	+ 8.0	1,644,997	1,763,903	− 6.7
South Central	24,678	24,292	+ 1.6	42,662	32,202	+ 32.5
Mountain	46,898	17,078	+174.6	114,595	73,813	+ 55.3
Pacific	40,796	17,450	+133.8	169,801	72,937	+132.8
Miscellaneous	604	741	− 18.5	1,223	1,418	− 13.8
TOTAL	1,644,327	1,553,234	+ 5.9	3,462,159	3,446,530	+ 0.5

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic sections	March 1940	March 1939	% change	Jan. to Mar., Inc. 1940	Jan. to Mar., Inc. 1939	% change
New England	500,277	525,525	− 4.8	1,465,592	1,129,708	+ 29.7
Middle Atlantic	2,170,164	983,653	+120.6	4,699,225	2,442,395	+ 92.4
South Atlantic	2,561,260	1,278,778	+100.3	6,718,580	3,363,656	+ 99.7
East North Central	3,589,904	3,262,856	+ 10.0	9,272,024	9,718,788	− 4.6
West North Central	8,297,694	8,379,978	− 1.0	37,866,728	28,765,203	+ 31.6
South Central	1,941,243	1,874,891	+ 3.5	5,000,422	6,088,796	− 17.9
Mountain	121,228	92,813	+ 30.6	2,360,881	1,426,406	+ 65.5
Pacific	2,065,563	808,462	+155.5	7,283,182	2,332,446	+212.3
Miscellaneous	0	0	–	0	0	–
TOTAL	21,247,333	17,206,956	+ 23.5	74,666,634	55,267,398	+ 35.1

* New York, Chicago, Philadelphia, and Boston.

Terminal market receipts of eggs in March were 6 per cent larger than in March 1939, but it appears that the April increase over last year will be less than that, probably nearer 2 per cent. As in previous months, the quantities of eggs shipped to the four Eastern markets from the New England and Pacific Coast sections in March were much greater than during the early months of 1939. Approximately half of the receipts at the four markets since March have been at Chicago, where the increase over a year ago has been nearly 11 per cent. Boston is the only one of the four markets where this year's April receipts have been less than in 1939.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
April 6	24	28,396	+10.57	+21.99
April 13	25	35,074	+ 3.56	+31.89
April 20	26	34,683	− 6.72	+15.07
April 27	25	34,579	− 2.15	+17.11

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
April 6	59	82,768	70,859	+3.29	+16.81
April 13	59	81,510	70,198	−1.52	+16.11
April 20	59	81,542	71,691	+0.04	+13.74
April 27	60	82,736	71,755	+1.46	+15.30

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs			Pounds of Poultry (000 omitted)			Pounds of Young Stock (000 omitted)			Pounds of Fowl (000 omitted)		
	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.
April 6	250,705	269,623	– 7.02	1,524	1,501	+1.54	Discontinued until quantities available are larger.			1,300	1,274	+2.10
April 13	290,324	237,558	+22.21	1,619	1,661	–2.53				1,392	1,431	–2.75
April 20	313,119	247,206	+26.66	1,836	1,801	+1.96				1,527	1,545	–1.14
April 27	306,913	265,805	+15.46	2,168	2,245	–3.46				1,833	1,891	–3.05

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1939	1938
April 4	10.5	8.6	8.9	.184	.193	.199	1.925	1.665	1.775
April 11	10.2	8.9	8.4	.184	.193	.213	1.870	1.735	1.780
April 18	10.6	9.0	8.3	.187	.195	.214	1.990	1.755	1.780
April 25	11.0	9.0	8.3	.185	.195	.215	2.030	1.755	1.780

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-Yr. Avg. 1930-39	1940	1939	1940	1939
April 6	7.49	6.39	6.71	.163	.161	1.227	1.028
April 13	7.84	6.55	6.80	.164	.160	1.291	1.048
April 20	8.28	6.69	6.71	.163	.162	1.356	1.084
April 27	8.21	6.65	6.68	.167	.162	1.376	1.081

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1940	1939	1938	1937	1936	1935
March	9.72	7.57	8.64	10.24	8.13	8.26
January-March	9.55	7.15	8.21	9.39	7.36	7.42
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

1940 Egg Prices at New York City

Kind	Apr. 5	Apr. 12	Apr. 19	Apr. 26	Apr. 26, '39
Mixed Color Firsts	17¼	17¼-17½	17½	17¼-17½	17-17¼
Nearby and Midwestern White Premium Marks	20-21½	20-21½	20-21½	20-21½	21-22½
Nearby and Midwestern White Specials	19½	19½	19½	19½	20-20½
Pacific Coast Specials	24¼-25½	24-25½	24¼-25½	24½-26½	26½-27
Nearby and Western Brown Exchange Specials	19½	19½	19½	19½	19½-20

Heavy Government purchases of eggs helped to support egg markets during April, the Agricultural Marketing Service reports. In addition, so-called "speculative interest" on the part of commercial buyers, who felt that storing at current values was a safe risk, served to keep prices from changing much during the month. Storing of shell eggs and frozen eggs since the first of April has not equalled the volume of last year, and stocks are below average. The heavier terminal market receipts have moved directly into consumption through regular distribution or through relief channels.

Purchases by the Federal Surplus Commodities Corporation from the time the current buying program was started in December, through April 25, total approximately 549,000 cases. For the period April 1-25, inclusive, purchases were 176,686 cases, of which 7,604 cases were bought through the Chicago Mercantile Exchange, 64,931 cases through the New York Mercantile Exchange, and 104,151 cases under the plan of direct offers. The latter figure included purchases in various producing sections as follows: Northeast—35,961 cases; Midwest—45,228 cases; Pacific Coast—22,962 cases.

For the entire period, beginning in December and through April 25, the breakdown is approximately as follows: On the Chicago Exchange—107,040 cases; on the New York Exchange—249,780 cases. On offers: Northeastern States—63,210 cases; Midwestern States—59,228 cases; Southwestern States—4,000 cases, Pacific Coast States—65,353 cases.

Most of these eggs have moved directly into consumption, only small quantities being placed in storage at a limited number of points where local relief agencies have such facilities available, and at such points only for temporary holding. The quantity thus held on April 1 was only 58,000 cases, all of which were at New York and Chicago. Present relief stocks at these cities are approximately 31,000 cases.

Relatively little change has been noted in wholesale prices of eggs during April. The market on nearby eggs at New York was barely steady to weak at times, and prices declined slightly. But Mixed Color Firsts, which include considerable quantities of eggs from the Central West, are substantially the same as they have been for the past thirty days. Pacific Coast eggs at New York have held their own, which is also true of eggs in Pacific Coast markets proper. Compared with a year ago, New York City prices of nearby eggs are slightly lower, Pacific Coast eggs are about a cent lower, but Mixed Color Firsts are approximately a cent higher. Pacific Coast markets are 2 to 3¢ below a year ago.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Farm Prices of Eggs per Dozen

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
			(Figures given in cents)						
Average 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	23.2	30.1
1938	21.6	16.4	16.2	15.9	17.6	18.2	19.9	24.9	29.0
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	20.6	25.8
1940	18.3	20.2	15.4	15.0					

Poultry Meat Prices

Farm Prices of Chickens per Pound

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
			(Figures given in cents)						
Average 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	15.2	14.1
1938	16.7	16.0	15.9	16.2	16.1	15.7	15.0	14.3	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.6	12.4
1940	12.0	12.2	12.8	12.9					

Eggs in Storage

Storage Holdings of Eggs

Kind	Apr. 1 5-Year Avg. 1935-39	Apr. 1 1939	Mar. 1 1940	Apr. 1 1940	% Change Apr. '39-Apr. '40
		(Thousands)			
Shell Eggs (cases)	1,227	1,105	81	851	–22.9
Frozen Eggs (lbs.)	59,076	60,465	38,070	44,078	–27.1
Frozen Case Equivalent (cases)*	1,688	1,728	1,088	1,259	–27.1
Total (cases)	2,915	2,833	1,169	2,110	–25.5

* Frozen eggs are converted on the basis of 35 lbs. to the case.

The into-storage movement of shell eggs since April 1 in the 35 cities is about 6 per cent lighter than that of last year, with a shortage on April 20 of 215,000 cases. Storage movements to date indicate a May 1 situation somewhat similar to that of 1936. Stocks in the above cities, are of greater volume than in 1936, but the percentages stored, in the 35 cities in relation to total U. S. stocks have been larger this year than in 1936, and on this basis, it appears that the May 1 total will approximate that of May 1, 1936. On that date egg holdings were among the lowest of record. May 1 stocks in 1936 were 3,039,000 cases. Another low year was 1932, when on May 1, holdings were only 2,982,000 cases, the lowest of record for May 1 since 1920. Apparently there is some hesitancy about storing this year in certain sections, partially due to price levels, and partly because of relatively small loan values. This is not a general situation. The storage increase at Chicago has been fairly heavy, and stocks there are now more than four times heavier than they were the first of April, while New York City stocks are only twice as heavy. New York City has shown about the same rate of increase as the entire 35 cities group.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	Apr. 1 5-Year Avg. 1935-39	Apr. 1 1939	Mar. 1 1940	Apr. 1 1940	% Change Apr. '39-Apr. '40
		(Thousand Pounds)			
Broilers	9,676	7,414	7,795	6,488	– 12.4
Fryers	9,225	9,232	6,688	4,731	– 48.7
Roasters	20,116	20,908	21,307	15,695	– 24.9
Fowls	13,051	13,970	20,334	17,038	+ 21.9
Turkeys	22,101	22,368	63,811	53,740	+140.2
Ducks	1,240	1,455	2,631	1,471	+ 1.1
Miscellaneous	13,260	15,640	14,140	10,190	– 34.8
Unclassified			8,053	6,094	
Total	88.669	90,987	144,759	115,447	+ 26.8

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During March			Salable Chicks Hatched During March			Chicks booked April 1 for Apr. or later delivery			
		1940	1939	% chg.	1940	1939	% chg.	No. of Plants	1940	1939	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	23	2,496	2,660	– 6	1,680	1,907	–12	16	1,534	1,441	+ 6
Mid. Atl.	42	2,858	3,073	– 7	1,561	1,625	– 4	40	1,121	1,191	– 6
S. Atl.	31	2,092	2,056	+ 2	1,246	1,356	– 8	22	802	733	+ 9
E. N. Cent.	105	8,990	9,237	– 3	3,913	4,490	–13	83	2,776	2,975	– 7
W. N. Cent.	117	10,784	11,043	– 2	4,635	5,062	– 8	103	4,560	4,764	– 4
S. Cent.	34	2,268	2,344	– 3	1,419	1,530	– 7	32	480	653	–26
Mountain	16	1,828	1,570	+16	751	817	– 8	15	920	876	+ 5
Pacific	54	4,553	6,180	–26	3,370	4,143	–19	46	2,015	2,818	–28
U. S.	422	35,869	38,163	– 6	18,575	20,930	–11	357	14,208	15,451	– 8
Jan.-Mar. Inc.		68,510	79,350	–14	29,686	38,445	–23		46,851	56,764	–17

The final summary of the hatchery reports for March indicates that 6 per cent fewer eggs were set and 11 per cent fewer chicks were hatched during March than a year earlier. According to the Agricultural Marketing Service, reports from 422 hatcheries with a capacity of 44,235,000 eggs showed hatchings of 18,575,000 chicks, compared with 20,930,000 chicks hatched by the same plants in March last year. The same plants reported 35,869,000 eggs set during March compared with 38,163,000 a year earlier.

Chicks booked April 1 for April or later delivery showed a decrease of 8 per cent compared with the same date last year.

Approximately 43 per cent of the chicks hatched in March were of the light breeds and 57 per cent heavy breeds. These proportions are the same as reported for March last year.

Following the trend of the preceding months of the year, the decline in the number of chicks sexed in March compared with a year earlier was not quite as pronounced as the decrease in the total number hatched. Reports from 176 plants indicated that the number of chicks sexed was 8 per cent less than the number sexed last year, but that the number sexed this year constituted 40 per cent of the total March production of the reporting plants compared with 38 per cent last year.

Turkey Eggs Set, Poults Hatched, and Poults Booked by Commercial Hatcheries

Geographic Section	No. Plants rptg. both years	Eggs set in March			Salable Poults Hatched in March			Poults booked April 1 for April or later delivery			
		1940	1939	% chg.	1940	1939	% chg.	No. of Plants	1940	1939	% chg.
		Thousands			Thousands				Thousands		
N. Eng., Md. Atl. & S. Atl.	21	110	171	–36	12	28	–57	14	146	216	–32
E. N. C., W. N. C. & S. Cen.	51	738	569	+30	186	211	–12	32	562	530	+ 6
Mt. & Pacific	30	971	1,004	– 3	157	158	– 1	20	719	1,217	–41
U. S.	102	1,819	1,744	+ 4	355	397	–11	66	1,427	1,963	–27

The production of turkey poults in March continued on the lower level indicated in the preceding months, but the number of eggs set showed a sharp gain. Reports from 102 hatcheries showed 355,000 poults hatched in March—a decrease of 11 per cent compared with March last year. The same plants, however, reported 4 per cent more turkey eggs set than were set a year earlier. The increase in eggs set was confined entirely to the East North Central and West North Central States where there was a gain of 30 per cent. Reductions in the remaining sections, however, brought the average gain for the country as a whole down to only 4 per cent. Poults booked April 1 for April or later delivery reported by 66 plants showed a decrease of 27 per cent compared with March last year. An increase of 6 per cent in bookings April 1 was reported by the East North Central and West North Central States compared with March last year.

—Comment from U.S.D.A. Hatchery Report.

Egg Breaking Operations

Egg Breaking Operations During March, 1940

Commodity		Quantities reported to date for Mar. 1940	Same Firm Comparison		
			Mar. 1940	Mar. 1939	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		7,811,213	7,144,815	6,744,706	+ 6
Mixed eggs (plain)		211,085	211,085	121,810	+73
Mixed eggs (emulsions, also with sugar, salt, etc.)		2,355,320	2,187,640	2,285,825	– 4
Egg whites (all descriptions)		8,292,135	8,191,205	9,567,573	–14
Egg yolks packed	Without salt, sugar, etc.	2,038,823	2,031,673	2,968,789	–32
	With sugar	3,562,759	3,562,759	3,617,574	– 2
	With salt	2,120,561	2,120,561	1,797,904	+18
	All yolk emulsions, including glycerine	146,880	146,880	73,860	+99
Total—pounds		26,538,776	25,596,618	27,178,041	– 6
Total—case egg equivalent		758,251	731,332	776,515	
Number of firms reporting		43	40		

Poultry Canning Operations

Poultry Canning Operations During March, 1940

Commodity	Quantities reported to date for Mar. 1940	Quantities reported for Feb. 1940	Same Firm Comparison		
			Mar. 1940	Mar. 1939	% change in 1940
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	4,853,523	4,707,289	4,855,523	3,529,727	+38
Number of firms reporting	19	18	19		

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		March 1940	March 1939	Jan. to Mar., Inc. 1940	Jan. to Mar., Inc. 1939
Eggs in shell	(doz.)	562,728	298,313	1,058,167	730,534
Eggs and Yolks, frozen, dried or canned	(lbs.)	23,121	Not available	52,136	Not available
Live Poultry	(lbs.)	15,401	14,317	35,015	30,860
Dressed Poultry	(lbs.)	78,725	149,669	295,052	442,787

Imports of Eggs and Poultry

Commodity		March 1940	March 1939	Jan. to Mar., Inc. 1940	Jan. to Mar., Inc. 1939
Eggs in shell	(doz.)	18,125	29,193	51,247	102,992
Whole Eggs, dried	(lbs.)	5,000	5,000	19,500	22,000
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	157,762	1,150	385,426	37,325
Yolks, frozen	(lbs.)	0	40	0	11,230
Egg Albumen, dried	(lbs.)	26,400	60,191	84,600	189,183
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	57,332	67,676	158,536	185,224
Dressed Poultry	(lbs.)	14,496	34,123	44,682	82,708
Poultry, prepared	(lbs.)	45,741	76,169	169,141	310,809

RESULTS OF LAYING TESTS

For the second consecutive month, Crooks Farm's Rhode Island Reds at Storrs top all other pens for the month. They scored 395 points from 362 eggs. Mullins' Reds at Texas were second with 392 points from 369 eggs. Hens at eight different tests tied with 31 eggs and 34.1 points per bird for March.

E. B. Parmenter's Red hen at Rhode Island continues to strut at the head of all laying test individuals. In the 183 days to April 1, she had laid 180 eggs and earned 196.5 points.

J. A. Hanson's Leghorns at Storrs continue to occupy the number one position to date. In second place ranks Parmenter's pen at Rhode Island. Hanson's second outfit at Storrs rates third, just a point ahead of Mullins' Reds at Texas. Fighting it out in fifth and sixth places are Thomas Mettler's Reds at Hunterdon, N. J., and Hardin's Reds at Georgia. In the following four positions are Alampi Poultry Breeding Farm's Reds at Passaic, N. J.; Eben Wood's New Hampshires at Storrs; R. W. Anderson's Reds at Storrs; and R. E. & F. H. Kendrick's Reds at Rhode Island.

Norman W. Amidon's Barred Rocks, the highest pen in this breed and the leading pen at the Pennsylvania Test, rank eleventh among all pens to April 1.

Townsley Trapnest Farm's team at Georgia is ahead in the White Rock breed, but E. A. Hirt's pen at Storrs is closing in rapidly.

Twenty Highest Pens in All Breeds to April 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2088	2156.10	Storrs
E. B. Parmenter	Rhode Island Red	1919	2080.50	Rhode Island
J. A. Hanson	White Leghorn	1994	2079.40	Storrs
W. C. Mullins	Rhode Island Red	1954	2078.50	Texas
Thomas Mettler	Rhode Island Red	1980	2054.95	Hunterdon, N. J.
H. J. Hardin	Rhode Island Red	1953	2052.25	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	2025	2041.20	Passaic, N. J.
Eben Wood	New Hampshire	1873	2028.55	Storrs
R. W. Anderson	Rhode Island Red	1929	2005.05	Storrs
R. E. & F. H. Kendrick	Rhode Island Red	1863	1995.35	Rhode Island
Norman W. Amidon	Barred Rock	1952	1993.40	Pennsylvania
E. B. Parmenter	Rhode Island Red	1849	1978.40	New York State
W. C. Mullins	Rhode Island Red	1886	1975.55	Texas
To-Lani Farm	Rhode Island Red	2004	1974.25	Georgia
Wm. L. Gilbert Home	White Leghorn	1875	1972.25	Storrs
J. J. Warren	Rhode Island Red	1891	1965.55	Storrs
E. B. Parmenter	Rhode Island Red	1880	1962.55	Western New York
George M. Heberer	White Leghorn	1908	1961.00	Texas
W. H. Wilson	Rhode Island Red	2011	1950.65	Georgia
E. B. Parmenter	Rhode Island Red	1849	1949.60	Storrs

High Pen in Each Standard Test to April 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2088	2156.10	Storrs
E. B. Parmenter	Rhode Island Red	1919	2080.50	Rhode Island
W. C. Mullins	Rhode Island Red	1954	2078.50	Texas
Thomas Mettler	Rhode Island Red	1980	2054.95	Hunterdon, N. J.
H. J. Hardin	Rhode Island Red	1953	2052.25	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	2025	2041.20	Passaic, N. J.
Norman Amidon	Barred Rock	1952	1993.40	Pennsylvania
E. B. Parmenter	Rhode Island Red	1849	1978.40	New York State
E. B. Parmenter	Rhode Island Red	1880	1962.55	Western New York
E. B. Parmenter	Rhode Island Red	1793	1886.80	Florida
Nelson's Leghorn Breed. Farm	White Leghorn	1794	1840.70	Oklahoma
J. J. Warren	Rhode Island Red	1762	1840.05	Michigan
E. B. Parmenter	Rhode Island Red	1729	1818.50	Maine
Missouri Valley Hatchery	Rhode Island Red	1635	1738.35	Missouri
Foreman Poultry Farm	White Leghorn	1602	1672.05	Central New York
Mishler-Liggett	White Leghorn	1669	1661.95	Arizona

High Pen in Each Standard Test for March

Owner	Breed	Eggs	Points	Test
Crooks Farm	Rhode Island Red	362	395.45	Storrs
W. C. Mullins	Rhode Island Red	369	392.00	Texas
Robert Chapman	Rhode Island Red	355	382.50	Oklahoma
Lone Oak Leghorn Farm	White Leghorn	357	380.10	Florida
Content Farms	White Leghorn	344	377.40	Central New York
W. C. Eckard	White Leghorn	341	370.85	Michigan
E. B. Parmenter	Rhode Island Red	342	369.05	Western New York
Glendale Poultry Farm	Rhode Island Red	337	368.65	Rhode Island
Thomas Mettler	Rhode Island Red	345	367.90	Hunterdon, N. J.
Joachim Breeding Farm	New Hampshire	329	355.40	Pennsylvania
Gold Spot Hatchery	White Leghorn	327	350.35	Missouri
To-Lani Farm	Rhode Island Red	337	347.30	Georgia
Ford's Riverbank Farm	Rhode Island Red	328	347.25	Maine
Martin Schubkegel	White Leghorn	322	342.70	Passaic, N. J.
R. O. Wagemaker	Rhode Island Red	339	338.95	New York State
Oak Knoll Poultry Farm	White Leghorn	331	337.15	Arizona

High Pen in Each Breed to April 1—(183 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2088	2156.10	Storrs
E. B. Parmenter	Rhode Island Red	1919	2080.50	Rhode Island
Eben Wood	New Hampshire	1873	2028.55	Storrs
Norman W. Amidon	Barred Rock	1952	1993.40	Pennsylvania
Harvey E. Taylor	White Wyandotte	1805	1788.95	Texas
Townsley Trapnest Farm	White Rock	1701	1738.95	Georgia
R. S. Thomas	Ancona	1604	1554.25	Pennsylvania
E. J. Covey	Black Minorca	1367	1405.40	Texas
Laclede Hatchery	Black Australorp	1431	1396.60	Oklahoma
Lindstrom Poultry Farm	Buff Minorca	1397	1312.35	Texas
T. D. Brown	White Minorca	1230	1272.40	Texas
Raymond Murphy	White Giant	1124	1182.50	Missouri
Famous Poultry Farm	Leghorn Cross	1144	1126.85	Georgia
Harry Phillips	Columbian Rock	1034	1097.00	Missouri
Iowa Master Breeders	Buff Orpington	931	977.60	Missouri
Chas. C. Ward	Buff Leghorn	909	885.25	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	1017	878.85	Florida
S. E. Raymond	Lamona	712	733.60	Storrs
R. L. Jones	Light Brahma	580	617.50	Hunterdon, N. J.
Walter Dobe	Barnevelder	377	403.50	Western New York
Daniel S. Riker	Buff Rock	269	239.05	Maine

High Hen in Each Breed to April 1—(183 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	180	196.50	Rhode Island
J. A. Hanson	White Leghorn	180	189.80	Storrs
George A. Pearce	New Hampshire	170	181.80	Hunterdon, N. J.
T. D. Brown	White Minorca	163	177.50	Texas
Kalerok Farm	White Rock	162	176.10	Maine
Norman W. Amidon	Barred Rock	162	175.85	Pennsylvania
Harvey E. Taylor	White Wyandotte	162	174.30	Texas
Famous Poultry Farms	Leghorn Cross	147	148.15	Georgia
E. J. Covey	Black Minorca	143	146.05	Texas
Ben G. Monroe	Ancona	142	141.90	Georgia
O. C. French	Black Australorp	130	138.55	Arizona
Iowa Master Breeders	Buff Orpington	130	137.00	Missouri
Raymond Murphy	White Giant	134	135.95	Missouri
Harry Phillips	Columbian Rock	115	123.70	Missouri
Lindstrom Poultry Farm	Buff Minorca	137	122.30	Texas
Charles C. Ward	Buff Leghorn	121	118.60	Oklahoma
S. E. Raymond	Lamona	112	116.35	Storrs
R. L. Jones	Light Brahma	105	110.70	Hunterdon, N. J.
Cedarlaid Poultry Farm	Brown Leghorn	117	99.50	Florida
Walter Dobe	Barnevelder	61	67.05	Western New York
Daniel S. Riker	Buff Rock	61	55.50	Maine

High Hen in Each Standard Test to April 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	180	196.50	Rhode Island
E. B. Parmenter	Rhode Island Red	174	191.05	Storrs
E. B. Parmenter	Rhode Island Red	173	190.20	Passaic, N. J.
H. J. Hardin	Rhode Island Red	174	189.55	Georgia
W. C. Mullins	Rhode Island Red	175	188.25	Texas
Thomas Mettler	Rhode Island Red	173	183.20	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	169	181.90	Maine
Booth Farms and Hatchery	White Leghorn	169	180.80	Florida
H. Guy Loose	White Leghorn	165	180.45	Pennsylvania
J. O. Coombs & Son	White Leghorn	167	179.30	Oklahoma
J. J. Warren	Rhode Island Red	163	177.10	New York State
J. A. Hanson	White Leghorn	169	174.90	Western New York
Missouri Valley Hatchery	Rhode Island Red	159	174.70	Missouri
J. J. Warren	Rhode Island Red	162	174.15	Michigan
Del Rio Farm	White Leghorn	156	169.00	Arizona
Holser's Valley Farm	White Leghorn	156	164.60	Central New York

High Hen in Each Standard Test for March

Owner	Breed	Eggs	Points	Test
Crooks Farm	Rhode Island Red	31	34.10	Hunterdon, N. J.
Erath Egg Farm	White Leghorn	31	34.10	Texas
H. J. Hardin	Rhode Island Red	31	34.10	Georgia
W. A. Downs	White Leghorn	31	34.10	Florida
Creighton Brothers	White Leghorn	31	34.10	Oklahoma
Booth Farms & Hatchery	White Leghorn	31	34.10	Missouri
W. C. Eckard	White Leghorn	31	34.10	Michigan
Phillipp Liggett	Black Australorp	31	34.10	Arizona
Holser's Valley Farm	White Leghorn	31	34.05	Western New York
Babcock's Hatchery	Rhode Island Red	31	34.05	Maine
Homestead Farm	Rhode Island Red	31	34.05	Rhode Island
Rucker's Imperial Breeding Farm	White Rock	31	34.05	Central New York
Donald I. Goodenough	Rhode Island Red	31	34.00	Storrs
Thomas Mettler	Rhode Island Red	31	33.95	Passaic, N. J.
Dryden Poultry Breeding Farm	Barred Rock	31	33.85	Pennsylvania
Lukert Leghorn Farm	White Leghorn	30	33.00	New York State

Twenty Highest White Leghorn Pens in Country to April 1

Owner	Eggs	Points	Test
J. A. Hanson	2088	2156.10	Storrs
J. A. Hanson	1994	2079.40	Storrs
Wm. L. Gilbert Home	1875	1972.25	Storrs
Geo. M. Heberer	1908	1961.00	Texas
Geo. M. Heberer	1859	1947.85	Texas
Horseshoe Poultry Ranch	1936	1946.40	Texas
W. E. Pyles and Son	1821	1938.35	Georgia
W. E. Pyles and Son	1838	1926.70	Georgia
Guy A. Leader	1861	1925.50	Storrs
Alfred Macmillan	1807	1924.20	Texas
Erath Egg Farm	1827	1919.75	Texas
Foreman Poultry Farm	1886	1908.45	Texas
J. O. Coombs and Son	1928	1907.15	Texas
Erath Egg Farm	1863	1903.85	Texas
C. O. Davis	1797	1892.95	Texas
W. A. Seidel	1855	1887.85	Texas
A. E. Guinn	1894	1879.45	Georgia
Kauder's Pedigreed Leghorns	1817	1873.15	Georgia
Sand Springs Home Farm	1811	1873.15	Texas
Pinebreeze Farm	1800	1871.85	Florida

Twenty Highest Rhode Island Red Pens in Country to April 1

Owner	Eggs	Points	Test
E. B. Parmenter	1919	2080.50	Rhode Island
W. C. Mullins	1954	2078.50	Texas
Thomas Mettler	1980	2054.95	Hunterdon, N. J.
H. J. Hardin	1953	2052.25	Georgia
Alampi Poultry Breeding Farm	2025	2041.20	Passaic, N. J.
Ralph W. Anderson	1929	2005.05	Storrs
R. E. & F. H. Kendrick	1863	1995.35	Rhode Island
E. B. Parmenter	1849	1978.40	New York State
W. C. Mullins	1886	1975.55	Texas
To-Lani Farm	2004	1974.25	Georgia
J. J. Warren	1891	1965.55	Storrs
E. B. Parmenter	1880	1962.55	Western New York
W. H. Wilson	2011	1950.65	Georgia
E. B. Parmenter	1849	1949.60	Storrs
Thomas Mettler	1865	1933.00	Passaic, N. J.
Alampi Poultry Breeding Farm	1801	1915.75	Passaic, N. J.
H. J. Hardin	1826	1911.85	Georgia
J. J. Warren	1817	1903.40	New York State
W. C. Mullins	1825	1902.05	Texas
J. J. Warren	1804	1898.55	Texas

Twenty Highest New Hampshire Pens in Country to April 1

Owner	Eggs	Points	Test
Eben Wood	1873	2028.55	Storrs
Thomas Mettler	1881	1894.85	Pennsylvania
George A. Pearce	1880	1884.20	Passaic, N. J.
Joachim Breeding Farm	1721	1796.40	Pennsylvania
Hubbard Farms	1765	1759.85	Pennsylvania
Kauder's Pedigreed Hampshires	1642	1756.70	Georgia
Pine Mountain Valley Farms	1713	1751.90	Georgia
Ned C. Willoughby	1750	1743.45	Georgia
Lamar W. Sexton	1688	1732.85	Hunterdon, N. J.
Wene Chick Farms	1624	1728.90	Storrs
Thomas J. Harrold	1721	1728.70	Georgia
Pine Top Poultry Farm	1594	1721.20	Storrs
George A. Pearce	1664	1720.15	Hunterdon, N. J.
James H. Horne	1619	1715.00	Storrs
Pine Top Poultry Farm	1639	1708.45	Michigan
Pine Top Poultry Farm	1692	1705.05	Georgia
A. J. Williams	1608	1704.65	Florida
Floyd H. Moore	1677	1704.55	Pennsylvania
Pine Mountain Valley Farms	1688	1692.25	Georgia
Eben Wood	1574	1689.00	Rhode Island

Twenty Highest Barred Plymouth Rock Pens in Country to April 1

Owner	Eggs	Points	Test
Norman W. Amidon	1952	1993.40	Pennsylvania
R. C. Cobb	1822	1858.85	Storrs
J. W. Schaible	1839	1815.50	Hunterdon, N. J.
Dryden Poultry Breeding Farm	1804	1768.20	Storrs
P. N. Hibbard	1751	1734.20	Storrs
Riley Poultry Farm	1753	1704.70	Texas
Fuzzydele Farms	1685	1681.90	Storrs
E. B. Parmenter	1589	1658.35	Georgia
Broad Acres Farm	1692	1656.20	Storrs
Riley Poultry Farm	1607	1634.05	Oklahoma
Dryden Poultry Breeding Farm	1664	1619.25	Pennsylvania
R. R. Parks	1597	1617.70	Maine
R. C. E. Wallace	1621	1613.10	Florida
Riley Poultry Farm	1578	1609.05	Michigan
Stuart W. Smith	1574	1577.00	Storrs
R. C. E. Wallace	1499	1566.45	Georgia
R. R. Parks	1525	1566.10	Florida
Penn's Poultry Farm	1567	1562.85	Texas
R. R. Parks	1580	1555.25	Pennsylvania
Riley Poultry Farm	1546	1548.80	Georgia

Twenty Highest White Plymouth Rock Pens in Country to April 1

Owner	Eggs	Points	Test
Townsley Trapnest Farm	1701	1738.95	Georgia
E. A. Hirt	1662	1723.55	Storrs
John Spangenberg	1685	1711.05	Storrs
Riley Poultry Farm	1672	1707.40	Oklahoma
John Spangenberg	1639	1673.00	Maine
Booth Farms and Hatchery	1663	1651.70	Texas
Homestead Farm	1772	1628.15	Pennsylvania
Booth Farms and Hatchery	1547	1623.75	Missouri
Riley Poultry Farm	1725	1613.20	Georgia
Drumm Egg Farm	1564	1590.85	Georgia
Riley Poultry Farm	1645	1590.05	Storrs
Kalerok Farm	1511	1586.35	Maine
E. A. Hirt	1496	1566.70	Rhode Island
Four Winds Farm	1575	1549.55	Michigan
Kalerok Farm	1449	1545.65	Rhode Island
Kalerok Farm	1468	1532.90	Pennsylvania
F. L. Woodworth	1420	1482.30	Michigan
Belcarihill Farms	1507	1473.55	Pennsylvania
A. H. Ward	1475	1470.45	Oklahoma
Albert C. Lawton	1452	1462.15	Storrs

Average Production in Each Test to April 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. in Ounces	Per Cent Mortality for Mar.	Per-Cent Mortality to Apr. 1
Storrs	1,300	115.34	117.85	24.52	1.00	5.23
Georgia	1,352	115.85	116.41	24.09	2.21	11.16
Pennsylvania	1,066	115.12	115.93	24.14	2.81	8.72
Texas	1,456	114.19	115.47	24.26	1.99	9.75
Oklahoma	650	108.72	110.60	24.40	.46	8.00
Passaic, N. J.	1,144	108.17	110.30	24.45	1.74	6.64
Hunterdon, N. J.	650	105.37	107.64	24.52	1.23	6.61
Florida	1,248	104.68	105.92	24.26	1.84	8.65
Michigan	741	102.21	103.92	24.38	2.56	9.31
Arizona	390	101.57	100.78	23.81	2.30	10.00
Rhode Island	650	94.75	98.79	25.02	1.84	11.23
New York State	1,092	94.31	95.33	24.24	.36	5.57
Maine	1,027	95.34	95.13	23.94	2.05	9.15
Missouri	780	85.17	89.74	25.27	1.79	9.48
Central New York	910	81.94	83.76	24.52	1.09	4.72
Western New York	884	81.86	83.67	24.52	1.92	6.56
All Tests	15,340	103.02	104.63	24.36	1.70	8.18

High Pen, Each Breed, in Illinois Non-Standard Test to April 1

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	1133	1095.85
E. T. Hirstein	White Leghorn	1042	1045.35
Belldear Hatchery	White Wyandotte	951	968.65
John Pfeifer	New Hampshire	882	960.25
Berry Ajax Hatchery	Black Australorp	929	940.80
F. S. Tarbill	Rhode Island Red	913	915.45
Illinois Hatchery	White Rock	833	845.70
Wallace Moody	Buff Rock	655	662.00

Five High Pens, R. O. P. Progeny Test, Paterson, N. J., to April 1

Owner	Breed	Eggs	Points
Crooks Farm	Rhode Island Red	2098	2147
E. B. Parmenter	Rhode Island Red	2117	2143
J. J. Warren	Rhode Island Red	1979	1987
W. B. Coles	White Leghorn	1922	1906
E. R. Rutter	White Rock	1867	1851

High Pen, Each Breed, in Vineland, N. J., Hen Test to April 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	1144	1247	Two-Year
E. B. Parmenter	Rhode Island Red	1045	1136	Two-Year
Hockhockson Farm	Barred Rock	928	995	Two-Year
Albert Lawton	White Rock	741	805	Two-Year
Pine Top Poultry Farm	New Hampshire	536	587	Two-Year
Sebold Poultry Farm	White Leghorn	759	811	Three-Year
J. J. Warren	Rhode Island Red	579	632	Three-Year
Nedlar Farm	New Hampshire	517	557	Three-Year
Schwegler's Hatchery	White Wyandotte	797	862	Mixed-Age
J. A. Hanson	White Leghorn	787	860	Mixed-Age
Quimby School	White Rock	778	842	Mixed-Age
Kerr Chickeries	Rhode Island Red	775	839	Mixed-Age
Kerr Chickeries	Barred Rock	762	822	Mixed-Age
Wene Chick Farm	New Hampshire	649	697	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	4947	5349	Two-Year
J. J. Warren	Rhode Island Red	4703	5048	Two-Year
Schwegler's Hatchery	Barred Rock	4158	4350	Two-Year
Albert Lawton	White Rock	3734	3964	Two-Year
Pine Top Poultry Farm	New Hampshire	3313	3578	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6721	7214	Three-Year
J. J. Warren	Rhode Island Red	6485	6989	Three-Year
Nedlar Farm	New Hampshire	5172	5664	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to April 1

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	1229	1328.70	Two-Year
E. B. Parmenter	Barred Rock	1186	1301.80	Two-Year
J. J. Warren	Rhode Island Red	1046	1140.55	Two-Year
Fuzzydele Farms	New Hampshire	1027	1127.90	Two-Year
Lindstrom Poultry Farm	White Wyandotte	895	978.85	Two-Year
Fuzzydele Farms	White Leghorn	1083	1189.30	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	4786	4962.00	Two-Year
E. B. Parmenter	Rhode Island Red	4558	4868.35	Two-Year
E. B. Parmenter	Barred Rock	4497	4824.95	Two-Year
Fuzzydele Farms	New Hampshire	4282	4606.15	Two-Year
Lindstrom Poultry Farm	White Wyandotte	3985	4260.50	Two-Year

Score Card for Rating Poultry Houses

Scoring a poultry house for sanitation, maintenance, comfort, health of flock, and for economy and efficiency is receiving attention in Massachusetts. Poultrymen can determine the weaknesses in a house by applying the following score card or by requesting the county agent to score it. A house that scores 80 points or higher is considered very serviceable.

Poultry Housing Score Card

		Points
I. Materials and Construction (For sanitation and maintenance)		30
A. Durability: non-absorbent floors; rat proofing; general quality of work and materials	(10)	
B. Condition: tight and sound; weather protected and neat	(10)	
C. Location: facing south; good air drainage	(10)	
II. Design and Adequacy (For comfort and health of flock)		30
A. Pen dimensions; at least 20 x 20, not more than 30 ft. long	(5)	
B. Ventilation — (1) Provision for	(5)	
(2) Operation of	(5)	
C. Insulation — Single story houses should be insulated on north wall and above roosts	(5)	
D. Litter—Condition of	(5)	
E. Lighting—Adequacy of	(5)	
III. Arrangement and Equipment (For economy and efficiency)		30
A. Manure disposal	(5)	
B. Watering devices—do they protect litter	(5)	
C. Feeders — 20 ft. per 100 birds	(5)	
D. Nests—1 to 5 hens	(5)	
E. Perches — Location — construction—number feet	(5)	
F. Servicing—Hoists, carrier, electric wiring, etc.	(5)	
IV. Auxiliaries		10
A. Egg handling and storage space	(5)	
B. Feed and supplies storage	(5)	
Totals		100

—G. T. Klein, Poultry Tribune, April, 1940.

SOME 186,000 eggs were used in baking the 250,000 cakes which the Standard Oil Company of Ohio distributed to its customers recently in observance of its seventieth anniversary. Eight bakeries, according to Printers' Ink, handled this unusual order, and the cakes were delivered to 5,000 service stations all on the same day.

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Vol. 2, No. 18 June, 1940

New Pattern for Eggs

By C. C. WARREN
Agricultural Adjustment Administration

Condensed from The Agricultural Situation

OF all the staple year-round farm commodities, eggs show the greatest seasonal fluctuations in prices received by farmers. The bottom of the cycle is from March through June and the top from October through January. Forty years or more ago, the peak price was usually in January, but later it came in December. For the last several years the peak in egg prices has been in November and indications are that it may soon come in October.

Peak prices in the fall and early winter were formerly quite high. In the early 1920's, farmers received nearly 50 cents a dozen, and as recently as the fall of 1930 fresh white eggs of good quality were wholesaled on the New York market for about 53 cents.

This great swing in prices from spring to fall was caused by an even greater change from season to season in the number of eggs laid per hen per month. Many small farm flocks formerly produced no eggs at all during the fall and winter.

During the 1920's, however, many discoveries were made in poultry nutrition and breeding, and many new methods of poultry management were developed. Poultry pro-

U. S. Bureau of Agricultural Economics, Washington, D. C.
(The Agricultural Situation, May, 1940)

ducers began to make use of these discoveries in order to obtain not only more eggs per hen during the year, but to get a greater proportion of these eggs during the high-priced months. As would be expected, the increased production during these months has had an effect on farm egg prices.

Peak Prices Not So High

Statistics show that during the period 1925-27 the January price was 130 per cent of the average for those years. From 1937-39, however, the January price was only 103 per cent of the average for the period. Prices formerly reached their seasonal low in March through June, whereas in the latter period May and June represent the low period. From June on a sharp rise occurs, reaching a peak in December during 1925-27, and in November during 1937-39.

The seasonal price curve is tending to flatten out. A greater proportion of the annual egg crop is now being produced in the months of October through February, and particularly during November, December, and January, and a significantly smaller percentage is being produced in the spring months. Producers have made a good beginning toward stabilizing production into a year-round business instead of concentrating a major part in the spring months.

In several ways a more stable price for eggs to the producer, and, consequently, to the consumer, is a change for the better. Great swings in prices discourage many consumers in making eggs a year-round part of their diet. This is particularly true of low-income consumers who omit eggs from their menus during the fall and winter.

Milk, another protective food, is consumed much more regularly throughout the year because the retail price shows little or no variation from month to month. Probably the per capita consumption is higher for this reason than if prices fluctuated widely, even around the same annual average.

It might be possible, therefore, for the poultry industry to increase its total production without being forced to accept lower average prices by selling eggs for a more uniform price throughout the year. Such a method of increasing consumption might be called the "hard way," since it involves many difficult production problems, such as breeding for early maturity and what is called persistency or the hen's ability to lay through the summer, molt quickly, and begin laying again in the fall.

Our annual per capita consumption of 300 eggs is the highest in the world, but our low-income groups, comprising over half our population, consume much less than this. These are the groups that would benefit the most from a further levelling of the production and price curves.

Egg and Poultry Income—1909-38

From "Income Parity for Agriculture,"
Issued by the U. S. Department of Agriculture

Year	Cash income from sales of chickens and eggs	Value of chickens and eggs consumed in farm household	Gross income from chickens and eggs
	1,000 dollars	1,000 dollars	1,000 dollars
1909	403,210	199,414	602,624
1910	457,215	223,714	680,929
1911	426,872	204,792	631,664
1912	458,268	214,397	672,665
1913	453,485	221,727	675,212
1914	473,772	230,522	704,294
1915	474,776	224,475	699,251
1916	526,902	244,369	771,271
1917	707,074	320,798	1,027,872
1918	830,837	399,450	1,230,287
1919	1,057,953	455,364	1,513,317
1920	1,098,339	465,167	1,563,506
1921	779,726	342,074	1,121,800
1922	755,555	320,393	1,075,948
1923	845,224	331,879	1,177,103
1924	863,012	318,412	1,181,424
1925	987,296	347,294	1,334,590
1926	1,035,438	365,891	1,401,329
1927	959,078	334,634	1,293,712
1928	1,058,596	347,894	1,406,490
1929	1,114,237	366,884	1,481,121
1930	938,993	306,554	1,245,547
1931	691,979	244,149	936,128
1932	513,772	191,983	705,755
1933	469,159	172,560	641,719
1934	545,076	199,363	744,439
1935	707,903	265,254	973,157
1936	725,453	279,250	1,004,703
1937	753,211	278,692	1,031,903
1938	699,128	266,845	965,973

Boosting Summer Egg Profits

By H. L. RICHARDSON
University of Delaware

Condensed from Poultry Tribune

THE problem of obtaining the maximum flow of eggs from any poultry plant during July, August, September and October is essentially a housing problem. This problem has two different angles; one to provide bird comfort which is so necessary to good egg production during hot weather, and the other is to provide housing arrangements and management such that all available buildings are filled with layers in production during this high price period.

Have Good Ventilation

Bird comfort is controlled by housing conditions. Nothing cuts summer production as quickly and surely as extremely hot and poorly ventilated laying houses. Such houses are equally disastrous whether used for housing yearling layers at the close of their first year's production, or whether used to house early pullets just starting production. Better houses—with insulated roofs—open front and back to permit cross ventilation — is one of the answers to the hot weather problem.

The other angle to the housing question involves the problem of how to provide good laying quarters for the early-hatched pullets, which start production in July or August, and at the same time keep and make the best use of the old hens and yearlings about to finish the laying year.

A very high percentage of poultry products is produced without much thought of the economics involved. There are hundreds of thousands of small farm and backyard flocks that produce less than 100 eggs per bird yearly, and most of this volume is produced during the late winter and spring months. Then comes hot weather, lice and mites go to work, and production drops from 60 to 40 to 30 per cent. Culling is the lesson which poultrymen have learned best; and presently, by June or July, the average poultry plant is operating at 50 per cent capacity or less.

The result of this is brought out by a study of the five-year average monthly price of top-grade eggs in New York City. Any prices from any market would show about the same trend—prices below average for the first seven months of the year (January to July) and above average for the last five months of the year (August to December) the result of small numbers of layers and low production.

Poultry-Dairy Publishing Co., Mount Morris, Ill.
(Poultry Tribune, June, 1940)

Commercial poultrymen are already quite familiar with the above situation and have tried to meet the situation by hatching a little earlier each year, one result of which has been to increase the flow of fall and winter eggs and to flood the fall market with "pullet" and "peewee" eggs. Such pullets usually suffer a "fall molt" and always lay small eggs over a long period. Moreover, they come into production during hot weather and, because some of the yearlings still occupy the laying house, the pullets are allowed to lay on range for from one to three months. This is not good poultry management.

Securing good production from a high percentage of yearling layers from July through October is the secret to increased numbers of summer and fall eggs. Success depends on three things: (1) the breeding of the stock used, (2) the feeding and general management given and (3) bird comfort, or the kind of housing conditions furnished.

Some strains are bred for what is called "persistency," which is the inherited capacity of continuing production through to the end of the first laying year—to molt late and even lay through the molt. In any event, layers at this time of year will respond to wet mash or other types of forced feeding and the extra eggs are well worth the effort. This should be started by the first or middle of July. Lighting should be started by the last of August. Cool, comfortable quarters are mandatory; probably a small yard supplied with shade, feeders and waterers is best, especially during hot weather.

Barracks System for Comfort

What is known as the "Barracks System" has been widely practiced by New England's commercial poultrymen in recent years as a means of increasing their flow of summer and early fall eggs. This plan is, first of all, based upon the premise that growing stock is put on range in range shelters so that brooder houses are vacant by June 1. At this time, the yearling birds are moved from the laying house to the brooder houses. Frequently, brooder houses are not suitable or do not provide enough space, in which case one or more of the summer "laying shelters" are provided. Such shelters consist of little else beside the roof and are, therefore, cool and well ventilated. They are usually about 24 feet square and will easily house 300 to 400 layers, especially if provided with a small shaded yard as above suggested.

It is important to move yearlings to these temporary or "barracks houses" by the first of June, because to wait until later will disturb production more than is likely to occur if done by June 1. Treat the flock thoroughly for lice and the houses for mites at this time.

This leaves the regular laying houses vacant by June 1, and gives ample opportunity to repair, clean and disinfect them in time to be ready to house early hatched pullets when production starts without forcing the sale of the yearlings to make room for them; or, without the alternative of allowing pullets to lay on range with the necessity of housing them after production starts, which frequently leads to disastrous results. However, laying houses not fit for producing hens during hot weather are also not fit for housing laying pullets during hot weather. Early-hatched pullets must have comfortable quarters or it is a mistake to hatch early; certainly a mistake to house them early.

How Barracks Plan Works

An example of how the "barracks" system works may be shown by the following illustration. Assume a laying plant with capacity for 1,000 layers and that 1,000 pullets were housed the fall of 1939. By May 1, 1940, allowing for normal culling and mortality there were 700 birds left. Cull these carefully and move to "barracks" houses on June 1 (say 600 of them). In the meantime the new crop of chicks has been hatched and 1,000 or more good pullets are on range. These are housed about July 15, and by August 1 are in production.

This so-called 1,000 hen plant will, then, have 1,000 pullets and 600 yearlings in production during August and September. By November, the pullets will have been culled down to 900 or even to 800 and the hens to 300. Here is a chance to again bring the laying houses up to capacity by filling up with the best of the hens from the "barracks" houses. The others are then sold in time to prepare brooder houses for the brooding season. This 1,000 hen plant will have had between 1,200 and 1,600 layers during August, September, October and November under this system, giving a maximum flow of eggs during the high price months.

GAS MASKS for chickens might be in order if this sort of thing continues. Reginald Groom of Towson, Md., told police he discovered two men in his henhouse silencing the birds with gas. Half his flock of 100 was asphyxiated.
—Newspaper Article.

AN OFFICIAL return shows Germany to have been the largest buyer of Dutch table poultry during 1939. Germany is credited with purchases totalling 2,186,000 pounds, followed by Great Britain 870,000 pounds and Switzerland 358,000 pounds.
—Poultry World, London, England, March 22, 1940.

The Duck Industry in the United States

By CHESTER H. WILCOX
Center Moriches, Long Island, N. Y.

Condensed from a Talk

CAPTAIN James Rankin, I believe, is generally credited with being the father of the commercial duck industry as we know it in the United States today. About 1875 he started the production of ducks in the suburbs of Boston. Prior to that time, ducks of various types and breeds had been grown, but they had been grown in very small quantities and were usually permitted to grow themselves—that is, they roamed the farms picking up what they could find. No effort had been made to produce them commercially.

Mr. Rankin started with a few ducks which he had brought from China. They were then known as the White Peking Duck. This is the duck that is now generally grown on the commercial farms in this country. Of course, the breed has been improved upon and the size of the bird has been increased. The vitality and early maturity has been worked upon, so that now we have what is generally known by the trade name of "Long Island Duckling."

At mature age these ducks are creamy white in color, the bills have a yellow tinge, and the shanks of the legs and the feet are of an orange color. The ducks will reach maturity in from 10 to 12 weeks of age, and at that age they will weigh from 5 to 6½ pounds average.

After Mr. Rankin showed that ducks could be successfully grown by penning them, feeding them regularly, and marketing the eggs, duck farms became popular throughout the country.

Long Island Duck Business

About 1885 the first ducks appeared on Long Island, hatched from eggs placed under setting hens, so that, of course, the production had to be very limited. These early ducks were fed generous quantities of seafood, fish, and sea grasses. This resulted in flesh which was rather fishy, so that sales were not very readily made in the markets at that time. About 1890 the first artificial incubation was introduced to the Island.

Six Million Ducks Annually

In the County of Suffolk on Long Island in an area of 20 square miles, each farm having a capacity of from there are 90 duck farms operating,

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 3, 1940.

20,000 to 250,000 ducks, with a yearly production of nearly six million ducks. That means there are six million ducklings going into the New York market every year, and through the New York market radiating into various sections of the country.

Next to Long Island is the New England section. It has been classed as the second area in production. This includes the lower part of Massachusetts, Connecticut, and Rhode Island.

In the Midwest, duck farming is growing and it is crowding the New England region for second place in production. Scattered throughout the other sections of the country are duck farms. The total production is from 10 to 12 million ducks.

Breeders Selected in Summer

The procedure in growing ducks and preparing for the market is practically the same in all sections of the country.

The first item, of course, is the selection of the breeders. They are selected usually in June or July, and the best of the birds are selected for that purpose. They are judged from the standpoint of health and their ability to produce meat in a short period of time and, also, their egg production ability.

These breeders will start laying around the middle of November and will continue until this time of the year. During that period they will produce from 120 to 135 eggs to the duck.

Ducks Lay Early in Day

Ducks are peculiar. They are different from hens in that they lay their eggs very early in the morning, even before daylight. Hens usually lay their eggs during the entire day. The eggs are ready to be gathered as soon as the breeders are let loose from the buildings in which they are confined at night. At about eight o'clock in the morning the breeders are loosed from the building and allowed to go into the outside pens.

The eggs are sorted, cleaned and placed in incubators, remaining there for 28 days, which is the period of incubation. The incubators used are generally the hot water type or the more recent electric cabinet machine.

When the ducklings are first hatched, they are a fluffy mass of yellow down, and they are handled like masses of down. When 100 to 125 of them are taken from an incubator, they are dumped into a basket like so much cotton. They are taken to the hot brooders and counted out of the basket. They will be perhaps a foot deep in the basket, and you might think they would smother. They are placed in individual pens and kept there from 5 to 10 days, when they pass to the semi-hot brooder where there is not so much heat and where they have access to outdoor runs.

From there they go to the cold brooders and to the growing sheds. At this stage, they have shelter to which they may go in case of storm.

At seven weeks of age they are driven into the fattening pens where they have no shelter of any type and are in the open 24 hours a day. They get plenty of fresh air and sunshine.

This entire growing period takes from 10 to 12 weeks, when they should reach mature age at the right time to ship them to market.

Ducks Are Heavy Eaters

Ducks are ravenous critters. It takes nearly 6 pounds of feed to grow a pound of duck. This is in spite of the fact that their lives are only from 10 to 12 weeks long. All the farms purchase the cleanest and best feed that it is possible for them to obtain.

The feeding ration is made up mostly of corn meal which is obtained from grinding the whole yellow corn of the best grade obtainable. We feed wheat bran and wheat flours, either wheat middlings or low-grade wheat flours, which are obtained from the largest flour mills in the country. Beside these basic feeds, we add meat scraps. Alfalfa meals are used and soybean meal is being used to some extent, as are also ground whole oats.

Usually there is some sort of milk product added in dry or semi-liquid form. Minerals are also added. Sometimes fish meal or crab meal is added to the mixture during the growing period, but never during the fattening period.

Ducks, of course, are water fowl. On commercial farms they do not get to the water so much, especially in the early stages. They are always supplied with an abundant supply of fresh, clean water, from which they will drink ravenously after eating.

They are fed damp mashes, but they still have a keen longing for water. In the later stages of the growing pens they have swimming water. Practically all of the Long Island farms are located on streams of water which enter the great South Bay which eventually goes into the Atlantic Ocean.

Bedding Dry and Clean

Sanitation is a very important item, of course. The pens in which the ducks are confined usually have nothing but soil for a floor. In some cases concrete or wooden floors have been used. On the floor is placed clean straw or shavings, which are usually of white pine. Sometimes peat moss or dried sugar cane pulp is used. This bedding is renewed practically every day with the smaller ducks and quite frequently with the older ducks. At all times the bedding is dry and clean.

Disinfecting has to be done. The

partitions of the pens, the walls of the building, and the drinking and feeding utensils making up the hot brooders where the smaller ducks are kept are disinfected regularly. This is not done so much with the older ducks. Every week or two the entire bedding is removed from the pens and taken outside, from where it is distributed to agricultural farms. At such times when the entire bedding is taken up, new bedding is put down from the ground up. At that time disinfection takes place very thoroughly. This process continues throughout the entire season.

Ducks like sunshine. They spend most of their time in the open, except in extremely hot weather they will seek shelter. The pens become more or less dirty and they are stripped at regular intervals. This material is also distributed to farmers who place it on the soil for fertilization purposes.

Annual Cleaning Is Thorough

Once a year a thorough housecleaning takes place. The pens are cleaned, scraped, swept, and the side walls and ground are thoroughly disinfected. The outside pens are usually limed, broken up, and planted to rye or wheat which will grow during the early months of the winter. This is eaten or trodden down by the ducks when they are placed on these runs in the late winter or early spring.

When the ducks are ready to market, they are then driven to the killing house. Ducks are different from hens or turkeys in that the domestic ducks do not fly. They are readily confined within the pens which are enclosed with 2-feet high poultry wire. They are driven in flocks of from six to ten thousand and they will almost always "follow the leader."

In the killing house they are killed and properly bled. The feathers are removed by hand plucking methods. There are four methods generally in use.

In the New England area the dry picking method is used and is generally adhered to. This method is done almost entirely by men. Each picker kills his own duck and plucks the feathers dry. Any pin feathers remaining are removed with sharp razors or knives. The ducks are then chilled and prepared for the market.

Slack Scald on Long Island

In the Long Island area the quick scald method is generally used. The ducks are dipped in kettles in which the water is at the boiling point. The feathers are removed almost entirely by women pickers. These women will average from 50 to 80 ducks in a 10-hour day, at 5 cents apiece. The remuneration is fairly good, except that they do not pick every day in the week.

In the Midwest the slack scald method is used, and the wax method is also being tried. The wax method of removing the feathers is something rather new in the duck industry, but it is being used successfully with chickens.

Carcasses Chilled

After the feathers are removed, the carcasses are placed in vats chilled by spring water being pumped directly through them or by water to which cracked ice has been added. After a thorough chilling, they are sorted, graded, and packed in the receptacles in which they go to the market. On Long Island they are still being packed in barrels, holding about 30 ducks. The ducks are packed in layers with ice between each layer and considerable ice on the top.

The ducks are headed up and trucked to the New York markets. In some few instances they are more thoroughly cooled on the farms. I think that is true in the Midwest. In these cases they are packed dry in boxes.

Quick Freezing Also Used

There is a third method which has come into use during the last two or three years. They go to the quick chill freezing plant which is located in the center of the industry on Long Island. They are gathered twice a day from the farms and only the very best quality of ducks is taken. They are packed dry in barrels. It is only a few minutes' transportation from the most outlying farm to the packing plant.

At the packing plant they are immediately put into the process of quick chilling. The time they come out from the quick dressing plant after they have been killed varies from 4 to 12 hours. It is hardly ever more than 12 hours from the time the duck was alive until it comes out of the freezing plant thoroughly frozen. The expression, "Fresher than fresh," truly holds.

In the other method of marketing, the ducks go to market in barrels which are picked up nightly by trucks, taken into the New York market by night, and the next day are distributed by wholesalers to the various retailers. The duck reaches the consumer between 24 and 48 hours from the time it was alive.

By whichever method it is marketed, you have a strictly fresh article.

Quality Shows Up In Roasting

The quality of duck, more so than any other poultry, is largely determined in its roasting. Of course, a duck may be prepared in other ways, but it is primarily a roasting proposition. Be sure that your duck is roasted long enough. Too many people try to hurry the roasting, thereby spoiling the duck.

You must remember that these commercial ducks are only 10 to 12 weeks old and are at the molting stage. They have a very heavy layer of animal fat lying immediately underneath the skin – especially underneath the breast skin. Unless they are roasted until this layer of fat is thoroughly cooked out, the meat is liable to be tough, even though they are only 10 to 12 weeks old. The fat acts as an insulator and will not permit the meat to become tender until the fat layer has been removed.

Ducks should be thoroughly roasted for at least two hours in the home range. This time applies for the smaller duck. From three to three and one-half hours is necessary for the large ducks ranging from 6 to 7 pounds. Ordinary range temperatures are sufficient.

The skin on the breast should be thin – the thickness of paper, I should say – with no layer of fat underneath it. The skin will be resting upon the meat and will be thin and crisp. It will be a very savory brown and can be eaten with the meat. If you leave that layer of fat there, you have a condition that is not so conducive to a good duck.

Uses Sun Porch for Turkey Shelter

When rebuilding a sun porch floored with 1 by 2-inch welded fabric, we added a roof of sheet metal to give protection to poults in rainy weather.

Roosts were put in the back part when the turkeys were six weeks old, and soon all were roosting in the sun porch.

When ready to move them to the range, we put poles under this porch and skid it wherever wanted. This makes for the least possible change in roosting quarters, thus lessening difficulty sometimes experienced in getting poults accustomed to a new location.

Roosts also can be put on top of this shelter.

—Herb Hell, Turkey World, March, 1940.

THE DEATH, at the age of 80, of Mr. W. Binns Smith, of Keighley, England, recalls a curious incident of many years ago. The mysterious death of 60 of Mr. Smith's exhibition birds aroused suspicions of poisoning, and to mark their disapproval of the suspected crime, the villagers organized a "hen funeral," the bodies of the 60 birds being carried around the streets on stretchers.

—Poultry World, London, England, Jan. 19, 1940.

HORSES and cattle rate above human beings on the mosquito's menu. Man rates just ahead of chickens and cats as the preferred source of a meal, entomologists have found.

—National Barred Rock Journal.

Five Tests With "Smoked" Turkey

By D. C. HENDERSON

University of Vermont Release

FIVE methods of preparing "smoked turkey" were tried out in November and December 1939 on the A. M. Goodnow farm near Brandon, Vermont. The object of the test was two-fold: (1) To determine whether or not the smoking of turkey would open a new market for large toms. (2) To determine, through "tasting bees" the preference of consumers.

Nine finished, or prime, birds were selected on November 5, 1939. They were killed and then "blood and feather" dressed (using the semi-scald method). They were then hung in an open shed for 18 hours in order to remove all body heat.

Both toms and hens were used. The birds were wingbanded to provide a quick means of identification.

The "blood and feather" weights were taken on November 6 after the carcasses were properly cooled. They were then "full drawn" and a record made of these weights. In this process the necks were removed and the wing tips cut off at the first joint.

Treatment No. 1—Three of the nine carcasses were packed in a hardwood barrel. They were then covered with a curing mixture consisting of the following:

6 lbs. of salt
3 lbs. of brown sugar
2 ozs. of saltpeter
Dissolved in 4½ gallons of water.

The carcasses were left in the curing solution from November 6 to November 17. They were then removed and a record made of the weights.

One carcass was subjected to an apple smoke for 20 hours.

One carcass was subjected to a cob smoke for 20 hours.

One carcass was subjected to a walnut smoke for 20 hours.

Treatment No. 2 – Two of the nine carcasses were packed in a hardwood barrel by a representative of a butcher shop in Rutland. The carcasses were covered with a curing solution made by this organization.

The carcasses were left in the pickle from November 6 to November 17. They were then removed and subjected to the cob smoke for 20 hours.

Treatment No. 3—Two carcasses were subjected to a "smoke salt" cure for from November 6 to November 17. Instructions furnished by the company manufacturing the salt were followed.

Extension Service, University of Vermont, Burlington, Vt.
("Talking Turkey," May 1, 1940)

Consumer Preferences for "Smoked" Turkey

Process	Total Firsts	Total Seconds	Total Thirds
Apple	32	5	1
Cob	15	9	9
Walnut	6	16	8
Sugar Cure	6	14	8
Old Hickory	4	24	6

Treatment No. 4 — Two carcasses were subjected to a "sugar cure salt" treatment for from November 6 to November 17. Instructions furnished by the company manufacturing this salt were followed.

After the carcasses were treated as described, they were cooked in an electric oven of a bakery in Burlington. Two "tasting bees" were held—one in Brandon on November 27 and the other in Burlington on December 1, 1939.

Both light and dark meat was rated as (1) excellent, (2) good, or (3) poor on the following points:

(a) aroma
(b) texture
(c) flavor
(d) tenderness
(e) general

The accompanying table is a summary of the consumer preference at both Brandon and Burlington.

As shown in the table, 32 consumers preferred the "apple smoke" meat, while five consumers put it in second place.

Conclusions

1. Consumers prefer a "light" smoked bird. This is indicated by the preponderance of votes in favor of the apple smoked meat as compared to the walnut.

2. The "smoke salt" and the "sugar cure salt" treatments were a bit too salty for the majority of tasters. Perhaps this criticism could be overcome by removing the carcasses from solution in about 10 days. More work needs to be done on this method of processing.

3. The tom carcasses, when processed and roasted, weighed 53.7 per cent of the "blood and feather" weight.

4. The hen carcasses, when processed and roasted, weighed 72 per cent of the "blood and feather" weight.

➤➤ FROM NOW ON, ducks will furnish all the eggs used by inmates at the La Tuna, New Mexico, federal penitentiary, according to the New York Herald Tribune. A flock of 250 ducks has been brought to the farm there to replace the chickens raised to supply eggs. It is believed that the ducks will lay more eggs at less cost than the chickens did.

Freezing Eggs for Food Lockers

By GEORGE F. STEWART

Condensed from Iowa Farm Science Reporter

WE have been doing a little experimental work here at the Iowa Station in freezing eggs for storage in cold storage lockers.

Storing frozen eggs commercially has been practiced about 40 years. So there's nothing startling new about what we have done. Today about 40 per cent of the stored eggs are frozen, according to the United States Bureau of Agricultural Economics' figures for 1938. The commercial frozen eggs are used largely by bakers, candy makers, noodle and mayonnaise manufacturers. These food manufacturers like frozen eggs because they can buy the part of the egg they want and not have to worry about disposing of the rest of it. That is, if they want only yolks, they can buy just that; if they want only whites, they can get them.

Those who freeze eggs commercially found long ago that if you freeze egg yolks just as the hen lays them, they are a "mess" when they thaw out. They are thick, gummy and tasteless, not at all like fresh yolks.

To avoid this condition, the yolks must be mixed with salt, or with corn sirup or honey. When one of these is added, the yolks come out about as they were when you stored them.

Preparation for Freezing

The preparation of eggs for locker storage is not difficult. The rules are as follows:

1. Separate the yolks from the whites, using the egg shell or a dime store egg separator.

2. The whites need no treatment whatsoever and may be placed immediately into a container for storage.

3. The yolks should be placed in a deep bowl and thoroughly mixed (an egg beater may be used if care is taken not to whip in air).

4. We now mix with the yolks one of the following:

   a. Salt—1 teaspoon to every 2 cups of yolk.
   b. Corn sirup—1 tablespoon to every 2 cups of yolk.
   c. Honey—1 tablespoon to every 2 cups of yolk.

Whether you use salt, sirup or honey will depend on your preference when using the egg. Most all recipes will work well with the salted yolk. A few foods, such as scrambled eggs, cannot be made so well with the sweetened yolk, but sweetened

Iowa Agricultural Experiment Station and Iowa Agricultural Extension Service, Ames, Iowa
(Iowa Farm Science Reporter, April, 1940)

yolk works fine with baked goods or mayonnaise.

5. The yolks are now ready for packaging for the freezer. We find the waxed cartons work best, but you may use glass jars, or tin cans. The glass, wax and tin offer good protection against drying out in the locker. If covers are not available for the tin cans, the frozen egg may be covered with a small amount of water which will protect the surface from drying. All containers should be filled to within only an inch of the top to allow for expansion.

Freeze Promptly

Once the eggs are prepared and in the containers they should be frozen promptly. The yolk is likely to sour rapidly when held above freezing. The whites do not spoil so easily, as most of you probably know. The eggs are first placed in the freezer room and later transferred to the locker after they are frozen.

Egg yolks and whites may be taken home as you need them, thawing and keeping them in the refrigerator, or if you are in a hurry they may be thawed in warm water (100-120 degrees Fahrenheit). We find that it is not safe to keep thawed yolks more than 48 hours even though they are in the refrigerator because of the danger of souring. Thawed whites may be kept as long as a week in the refrigerator before they are used without undergoing any serious change.

Using Frozen Eggs

These thawed yolks and whites may be used just as you now use fresh egg whites and yolks. For convenience you may use the following figures for estimating the amounts of yolk or white corresponding to one egg.

1½ tablespoons of white equals the white of one egg.

1 tablespoon of yolk equals the yolk of one egg.

Where the whole mixed egg is desired, one merely adds 1½ tablespoons of white to 1 tablespoon of yolk. Some may want to mix the whole eggs before freezing, and this works very well. They must be mixed the same as yolks alone—with salt, sirup or honey.

Egg yolks and whites prepared in the manner suggested above, we find may be stored a full year without loss of quality in lockers operating at not higher than 5 degrees above zero. There seems to be little

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IN every carton of eggs I place a nicely shaped feather. I find that most customers especially those from the city, get quite a kick from it. Notice the comment when the customer opens the carton of eggs. In fact, one lady had to make a hat especially for her little girl so she could put the feather in it.

—G. A. Jackson in American Poultry Journal, April, 1940.

Gizzard Erosion in Chicks

By C. E. LEE

Condensed from Rural New Yorker

REPORTS of gizzard erosion in baby chicks are increasingly frequent. This trouble first became serious on the Pacific Coast, and has in the past two years become very serious in parts of the Northeastern States and the Middle West.

While mycosis of the digestive tract probably has been the cause of some gizzard erosion, we have been frequently unable to find mycosis in chicks with gizzard erosion.

Types of Gizzard Erosion

There are several types of gizzard erosion. In one the lesions are characterized by their shallow nature and do not go below the lining of the gizzard. The brown or yellowish roughened areas of the gizzard may be slipped off by sidewise pressure with the thumb on the gizzard lining. Where mycosis is associated with the condition, this is the type of gizzard erosion that we have found. In other cases the erosion extends into the muscular tissue of the gizzard like an ulcer. Diagnosis should be verified by a competent pathologist.

Gizzard erosion has been found in chicks on a wide variety of rations and chicks that were hatched from eggs laid by breeders on a wide variety of rations. The investigators at Wisconsin Experiment Station have indicated that gizzard erosion may be due to the lack of grit or other hard material in the ration and they were able to cure some cases by feeding hard grain or hard grit, or both.

Anti-Gizzard Erosion Vitamin

Research workers in California have determined the presence of an actual gizzard erosion factor among the vitamins. They have reported that there is not likely to be a deficiency of this anti-gizzard erosion vitamin in any good rations carrying alfalfa leaf meal, bran and middlings. The anti-gizzard erosion vitamin is found particularly in alfalfa leaf meal, wheat bran, wheat middlings, and the green grasses. It is thought by some investigators to be cholic acid, though this remains to be proven. Gizzard erosion is now occuring in chicks on rations carrying large percentages of wheat bran, wheat middlings, alfalfa leaf meal, etc., and on rations which gave no sign of this trouble a few years ago and are apparently still giving excellent results on some flocks and in some areas.

Rural Publishing Co., 333 West 30th St., New York City
(Rural New Yorker, May 18, 1940)

Some investigators believe that the trouble is due to some type of fungus and this would seem to be supported by the fact that the copper sulphate treatment used in the control of mycosis of the digestive tract has proved to be of decided aid in most cases of gizzard erosion. Other investigators have found no evidence of a fungus.

It is quite possible that the so-called "anti-gizzard erosion" vitamin is not one vitamin, but a complex of two or more, and that perhaps we occasionally get a deficiency of one of these factors which may be somewhat harder to obtain in quantity in a normal ration.

Complications Often Present

Most of the cases showing any substantial loss from gizzard erosion are also complicated by the presence of chick bronchitis, coccidiosis, poor brooder regulation, improper ventilation, or other factors which reduce the resistence of the chicks. Adverse factors of this kind are quite likely to result in more or less mortality in the chicks with gizzard erosion, where under good brooding conditions, they may be very little handicapped by the presence of a little erosion.

Copper Sulphate Treatment

The treatment for gizzard erosion in chicks which has given us the best results to date is the copper sulphate and vinegar treatment. The solution consists of one pound of copper sulphate to one gallon of water and the addition of one tablespoonful of this stock solution, plus an equal amount of vinegar, to each gallon of drinking water consumed by the birds.

Where automatic waterers are used, thus making it impractical to use this copper sulphate and vinegar treatment satisfactorily in the drinking water, we have secured good results by the use of four to six and one-half ounces of powdered copper sulphate per 100 pounds of dry mash.

In some cases, this has decreased the palatability of the mash and a plan of intermittent feeding with this medicated mash had to be followed. In other cases, the chicks took to the mash without delay, and in spite of a fairly heavy dosage of copper sulphate. It seems desirable, however, to use the minimum dosage mentioned above except in severe cases where the dosage at minimum level has not proved effective.

Whether the fact that copper sulphate has an astringent effect on the tissues is the reason for its value in treating this trouble or not, we do not know, but certainly it has been of real benefit. No cod liver oil or mineral oil should be used on the scratch grain while chicks are being given the copper sulphate treatment, nor within three days before or after the treatment, but oil in the usual dry mash is safe.

When the copper sulphate and vinegar treatment is used, the medicated water should be placed in wood, porcelain, glass or earthenware drinking vessels. If galvanized drinking vessels are to be used, it is suggested that they be placed in the solution, or filled with it, and the solution allowed to stand in the metal fountains or troughs for 48 hours before being used. They should then be washed carefully and refilled with the solution and again carefully washed and refilled with fresh solution at least once a day.

Just how safe this will always be with different types and qualities of galvanizing, we do not know, but it has been used successfully by some poultrymen. The initial 48 hour period apparently results in the deposit of some copper on the surface of the metal vessel and thereafter any action between the copper sulphate vinegar solution and the metal surface is apparently much less.

Dress Turkeys Carefully for Market

There is nothing that tends to depreciate the market value of any food product as does unclean and sloppy appearance. Many turkey growers overlook this fact in presenting their birds to the market in an unclean and unattractive condition. In consequence, these birds meet sales resistance from the wholesaler to the ultimate consumer.

In the first place, don't kill birds until they are prime and will present a clean appearance when picked. Your loss is two-fold — first, in quickest and most profitable weight gain, and second, in the grading of birds.

Never wrap the heads until the blood is dry. If the blood clot in the head is removed as soon as the bird is killed, the blood will soon drain out and dry. Nothing is more disgusting than a lot of bloodsoaked papers or sacks wrapped around a turkey's head, which smear every other bird they come in contact with. Get some regular head wraps and do a good job of putting them on. Get a supply of turkey sacks and sack each bird. True, they will cost some money, but very little per bird and will save dollars in the way the birds are graded.

I have seen many prime birds go as seconds because the dirty toes of a bird had been ground into its breast, or it was skinned up and scratched after killing. Treat birds as high-grade, perishable merchandise; not as so much cord wood.

—C. G. Lewis, Pacific Rural Press, Feb. 10, 1940.

Systems of Feeding Poultry

By HARRY W. TITUS

Excerpt from U.S.D.A. Yearbook

NEARLY every poultryman has his own system of feeding, but most of the various systems may be classified as one of the following or as a modification of one of them: (1) All-mash, (2) mash-grain, (3) pellet, and (4) grain-milk. It cannot be said that one system is better than another under all conditions, but it is true that under certain conditions one system may be superior to the others. In any case, it should be pointed out with as much emphasis as possible that it is far more important to supply poultry with adequate quantities of all the necessary nutrients than it is to follow any given system. Any system that insures adequate supplies of all the necessary nutrients is almost certain to be successful from the standpoint of nutrition. However, any system that ignores the principles of sanitation and economics may fail, no matter how well the poultry may be nourished.

The All-Mash System

The all-mash system of feeding derives its name from the fact that all the feeding stuffs used are suitably ground and mixed together to form a mash. In some cases, oystershell or limestone grit is fed in separate hoppers as a supplementary source of calcium; but it is generally best to use an all-mash diet in which all the necessary calcium is included in the form of finely ground oystershell or limestone.

In one simple modification of the all-mash system a part of the mash is moistened and fed as a crumbly wet mash in an effort to increase—or sometimes to maintain—feed consumption. Another modification is to omit dried milk from the all-mash mixture and to feed an equivalent quantity (roughly 10 times as much by weight) of liquid skim milk or liquid buttermilk. When there is a sufficient supply of liquid skim milk or buttermilk, some of the other protein supplements may be omitted from the all-mash mixture and the birds given all the liquid milk they will drink.

It is generally accepted that the all-mash system of feeding is best for the first 4 to 6 weeks. Furthermore, it has been demonstrated repeatedly that this system is suitable for the entire period of growth. Nevertheless, many poultrymen prefer to begin feeding cracked grain some time between the fourth and eighth weeks, that is, to change to the mash-grain system. This, of course, is not necessary and perhaps is undesirable if the all-mash system is to be used after the pullets come into production, but it is the proper thing to do if the mash-grain system is to be used.

U. S. Department of Agriculture, Washington, D. C.
(U. S. D. A. Yearbook of Agriculture, 1939)

One of the chief advantages of the all-mash system in the feeding of laying stock is that it permits the poultryman to control the color of the yolks of the eggs produced. This is of considerable importance because on some markets a premium is paid for eggs with light-colored yolks. Another point is that this system tends to insure a greater uniformity of yolk color, which also is of great importance from the standpoint of the market value of the eggs; it appears likely in the future uniformity of color will be of much greater importance than lightness of color. Furthermore, there is some evidence that when the all-mash system is used, the hatchability of the eggs is more uniform. In any case, the all-mash system is satisfactory for caged or confined birds as well as for those that have access to sunshine and green range. This system is usually the best one for the inexperienced poultryman.

The Mash-Grain System

As its name implies, the mash-grain system involves the feeding of both mash and grain. It yields the best results in the hands of the skilled feeder. It is more flexible than the all-mash system and permits the poultryman who is familiar with the feed requirements of his birds to feed them accordingly.

There are several modifications of this system. As in the all-mash system, the oystershell or limestone grit may be fed separately or it may be ground fine and included in the mash. Likewise, wet mash may be fed for the purpose of maintaining or increasing feed consumption. When cod liver oil or a similar source of vitamin D is required, it may be mixed and fed with the mash, as it usually is, or it may be mixed fresh each day with a portion of the grain. Yolk color may be controlled by using a mash and a grain mixture that have very nearly the same effect on it.

The Pellet System

The pellet system of feeding is in effect a modification of the all-mash system in that an all-mash diet is first prepared and then made into pellets. It may be modified in the same ways as the all-mash system. The advantages claimed for it are that it does not permit the birds to pick out some of the ingredients and leave the others, and that it tends to reduce the quantity of feed thrown from the hoppers and wasted. It does insure that all the birds will eat the same kind of feed, but at times the quantity of feed wasted may be as great as when the all-mash system is used.

The Grain-Milk System

When the grain-milk system is used the birds are usually given nothing but liquid skim milk or buttermilk to drink and are permitted to eat all the grains or grain mixture they want. Oystershell or limestone grit is fed in hoppers. The system is not suitable for feeding caged birds or birds otherwise confined. In general it is not recommended, but it may be used when plenty of good range is available and there is an abundance of liquid milk that, if not used in this manner, would have to be thrown away. This system may be used for both growing and laying chickens, but the former should be started on an all-mash diet. The feeding of the grain should be begun after the fourth week, the quantity being increased as rapidly as possible. The starting mash should not be discontinued abruptly but should be decreased gradually between the fourth and tenth weeks so that none is being fed by the end of the tenth week.

Junket for Hens

The agricultural magazines have been talking a lot lately about the advantages of milk for hens. But they only mention dried skim milk and liquid milk. I've been using junket rennet in the milk for a pen of 22 pullets, that were hatched last May, with very good results.

I started using the milk at first on the advice of an old poultryman because I was having a little trouble with soft shelled eggs. The milk did help the shell problem. I was feeding sour milk at that time. But I found it difficult to keep the milk at the same degree of sourness. There was a lot of inconvenience too because milk for hens has to be kept in receptacles that are not affected by the lactic acid of sour milk.

So I started to use the junket instead. Expensive, you say? You must have been reading the directions which say a junket tablet to a pint of milk. By experimenting I found that one tablet will solidify 10 or 15 quarts of milk just as well as a pint—maybe more; I never had any more milk than that at one time. It is necessary to mix a little more water with your junket tablet for larger quantities of milk.

I feed the junket as soon as it hardens in a small wooden trough, and only as much as the hens will clean up in half an hour. My hens will leave anything else for the milk prepared this way.

And you'd like to know the results? Well, my record book shows

1,550 eggs from the 22 hens since the middle of October. With the feed cost (I feed mash and cracked corn and some green feed) running about a dollar a week for this experimental pen, even with the low cost of eggs I've made a good profit right along.

—Ethel Kittredge in New England Homestead, Mar. 23, 1940.

Raising Guineas for Broilers

Guinea broilers weighing about one pound are in demand as a substitute for wild game. House the birds in specially built pens in which they may be shut at night and confined until late forenoon of each day. The eggs will then be deposited where they can be cared for.

Mere inclosures with small stormproof shelters will serve as pens. The nests may be bottomless boxes set on the bare ground with a little straw or chaff thrown into them. Weather-beaten boxes will serve better than new. Guineas breed and thrive better if not disturbed. Egg gathering and other work are best done in the afternoon when the fowls are released. Always leave three or four nest eggs to encourage the hen to retain the nest. If these eggs are numbered in rotation with small pencil marks, none need be left in the nest too long.

As soon as a setting of 12 or 15 eggs has been laid, they may be set under a chicken hen. A hen with a somewhat nervous disposition will make the best mother for guineas, as she will be more disposed to take them out to rustle for insects. Train the hen to return to the brood coop each night and keep her there until the dew dries in the morning. Tramping around in the wet grass is not good for young guineas, chickens or turkey poults.

Forced feeding doesn't work with guineas, but chick feed and small grains will induce the brood to return each evening to the brood coop. With ordinary care the chicks should average one pound each within eight weeks, and be fit for the trade of high class hotels, restaurants, or householders who want a real poultry treat.

Before killing the broilers get in touch with a commission dealer to learn his particular requirements. The usual method is simply to bleed each bird by sticking a sharp-pointed knife up through the roof of the mouth and into the base of the brain. They are shipped, after bleeding and cooling, without removing head or feathers. They look best that way in the retail store.

The price for guinea broilers varies, of course, but, from year to year, it has averaged $1 to $1.25 a pair for the one-pound birds.

—E. R. G., Rural New Yorker.

POULTRY RESEARCH

Protein Requirements of White Leghorn Pullets

A chick diet for birds to go into the laying flock should include 17 per cent high quality protein for the first 6 weeks, 15 per cent for the 7-12 week period, and 13 per cent from 13 weeks to maturity, J. S. Carver, V. Heiman, J. W. Cook, and J. L. St. John conclude after a series of tests carried out at the State College of Washington Agricultural Experiment Station.

The report in Washington Agricultural Experiment Station's Bulletin No. 383 indicates that the feeding of high (17 and 19 per cent) protein level rations will result in greater growth for the first few weeks, but that the protein level can be cut down as the birds approach maturity without sacrificing gains. No matter what level was fed, however, the protein of the feed was utilized most efficiently during the first 6 weeks of the pullet's life and with decreased efficiency until the bird reached 16 weeks of age. Groups fed 17 per cent protein matured in 154 days while those receiving 13 per cent protein took 163 days to produce the first egg. The quantity of protein in the diets did not influence chick mortality.

A further check of the birds from the different groups indicated that there was no significant variation in mortality as mature birds, feed consumption during the laying period was not affected by protein levels fed during pre-maturity, and there was no effect on the rate of egg production of the pullets fed different diets as chicks.

Effect of Cold Drinking Water on Yolk Absorption in Chicks

The common belief that cold drinking water has a detrimental effect on chick growth and yolk absorption appears false, according to a report on a series of short tests carried on at the Southwest Poultry Experiment Station, Glendale, Arizona, by Burt W. Heywang.

A total of 835 chicks was involved in the experiments, with one series of tests started on birds hatched in January and another on March birds, as reported in Poultry Science (Vol. 19, No. 3).

Most of the chicks in both groups, and in both tests, had absorbed all the yolk by the tenth day after hatching, and the rate of absorption, (as calculated by killing a like number of birds from each group on the second, fourth, sixth, eighth, and tenth day of the tests) was similar regardless of whether the chicks

drank warm or cold water.

In the experiment started in January, slightly greater average body weight was obtained in the group given warm water, but in the experiment started in March, slightly greater average weight was obtained in the group receiving cold water. Differences between the body weight of chicks of the same sex in the two groups were not significant.

Comparisons of relative efficiencies of feed utilization indicate that the drinking of cold water does not adversely affect the digesting of feed nutrients by young chicks.

Egg Yield in Batteries

Over a period of five years, the average egg production of pullets kept in laying batteries at the Ohio Experiment Station was seven eggs more than the floor birds, according to Bul. 600 containing the station's 57th annual report.

The average 5-year loss of pullets in batteries was 38.6 per cent in contrast to 51.4 per cent for those in the floor pens. In only two of the 25 tests made during the five years did the mortality of the pullets in batteries exceed that of the floor birds.

Effects of Sulphur upon Coccidiosis

That the use of sulphur in controlling coccidiosis is still in the experimental stage and cannot as yet be recommended for use by the commercial poultryman was the conclusion of O. E. Goff and C. W. Upp in a preliminary report of their work carried on at Louisiana State University Agricultural Experiment Station and reported in Poultry Science (Vol. 19, No. 3).

Coccidiosis was artificially produced by inoculating test chicks with a culture obtained from "culture chicks" which, in turn, had been inoculated with sporulated oocysts obtained from the ceca of chicks contracting the disease in a natural outbreak.

Four commercially available grades of sulphur were used: namely, flowers of sulphur, commercial flour sulphur, 325 mesh or super-fine commercial dusting sulphur, and micronized dusting sulphur.

Wide variations in effectiveness between the various grades were apparent, but each of the four grades of sulphur had value in preventing coccidiosis mortality. The addition of 5 per cent of poultry charcoal to the rations containing 5 per cent sulphur apparently enhanced their protective value.

Mortality alone appears to be an inadequate measure of the value of sulphur, however, as all inoculated chicks produced oocysts, regardless of the amount or grade of sulphur fed, and the coccidia produced when chicks had received as much as 10 per cent of any of the grades proved to be viable.

Commercial flour sulphur, when supplemented with ½ per cent cod liver oil, produced a normal or near normal bone ash in 8-week-old chicks, but other grades apparently interferred with bone development to a greater extent. The skin about the face and eyes and over the body of the chicks became irritated, large flakes of epithelial debris were observed on the body, and the vent was greatly irritated. That growth was affected by the rations containing sulphur was apparent by the second week of feeding.

Lack of data concerning prevention of coccidiosis by any sulphur combination, under field conditions, prohibits recommendations for its use.

Fowl Paralysis and Ruptured Yolks

Observations made in connection with the mortality in some feeding experiments at the West Virginia Experiment Station seem to indicate that there might be some relationship of ruptured yolks to fowl paralysis. Earl N. Moore of that station presents an analysis of the data in the Journal of the American Veterinary Medical Association, May, 1940 (Vol. 96, No. 759).

Ruptured yolks account for a great deal of mortality in laying flocks at the present time. This is indicated by mortality records at various egg laying contests.

Ruptured yolk does not represent a specific disease condition, according to the author. He states further:

"The losses from fowl paralysis or fowl paralysis associated with ruptured yolk accounted for 11.2 per cent of the deaths. Seven per cent were due to fowl paralysis and 4.2 per cent showed the two conditions present in the same bird. Only 1.8 per cent of the birds showed ruptured yolk alone.

"By chance we could expect 11 birds to show the two conditions in the same individual (after deducting those birds with fowl paralysis and without ruptured yolk which did not lay for three or more weeks prior to autopsy). Actually, there were double the number we could expect by chance if they were independent of each other."

Oat Hull Fiber Controls Cannibalism, Aids Feathering

Oat hull fiber obtained by dilute acid digestion of oat hulls, when fed at a level producing a ration of 11 per cent fiber, was found to control cannibalism and to improve the quality of feathers in feeding trials carried on by G. E. Bearse, V. L. Miller, and C. F. McClary at the Western Washington Experiment Station. The trials involved duplicate lots of 64 White Leghorn pullets each from 2 to 40 weeks of age.

The oat hull was equally effective, but two of its other fractions, namely, the ash of the dilute acid extract and the water extract, were of little value in preventing cannibalism under the conditions of this experiment as reported in Poultry Science (Vol. 19, No. 3).

Steamed Potatoes for Pullets

Steamed potatoes fed in amounts up to 50 per cent of the total feed intake had no detrimental effect on egg production or health of laying pullets in a six months test, started at the outbreak of the war, at the National Institute of Poultry Husbandry, England. The results are reported in the Harper Adams Utility Poultry Journal, May, 1940.

Production ranged from 45.7 per cent for the control pen to 49 per cent for the pen on a 41 per cent potato ration. The pen on a 50 per cent steamed potato ration averaged 48.7 per cent egg production.

Greater gains in body weight occurred in the control pen than in the pens on the potato rations.

Effect of Temperature on Size of Eggs

A decline in egg size in summer is not the result of any fatiguing effect of a long period of production, but seems to be caused by the effects of high temperature, according to the report of D. C. Warren, Kansas Agricultural Experiment Station, as reported in the Journal of Agricultural Research (Vol. 59, No. 6).

In data secured on egg size from 11 localities in latitudes extending from the Equator to as far north as Scotland, it was shown that egg size varied with temperature changes to a close degree after pullets reached physiological maturity. In localities where summer temperatures were high, the summer egg size was greatly depressed, and the bird was prevented from expressing its maximum potentialities for egg size unless the temperature dropped below 70 degrees at the end of the laying year.

Potassium Iodide Employed as Treatment for Fowl Paralysis

Potassium iodide was found to be effective in bringing about the cure of chickens suffering from fowl paralysis, according to Ernest Gray, advisory veterinary pathologist to the Essex Institute of Agriculture, England, writing in the British poultry weekly, Eggs, in the issues of May 8 and May 15, 1940.

Two injections of 5 cc. of a 10 per cent solution of potassium iodide in water, injected into the abdomen on two successive days, doubled or trebeled the number of white blood cells and caused complete recovery by the end of the week. Of 16 birds so treated, there were only three failures—birds at post mortem found to be suffering from visceral gout, tapeworms, and dropsy of the bursa of Fabricius, respectively.

Riboflavin from Young Grasses

When poultry have access to green range, the riboflavin requirements are usually met by the tender grass consumed, according to Bul. 600, containing the 57th annual report of the Ohio Experiment Station.

It was found that young oats, wheat, alfalfa, timothy and blue grass plants approximately 6 inches high contained more riboflavin, on a dry basis, than dried milk, but as the plants became more mature, the riboflavin content decreased materially.

Riboflavin and Hatchability

Hens on a ration deficient only in riboflavin produced eggs of which less than 10 per cent of the fertile ones hatched, according to Bul. 600, 57th annual report of the Ohio Experiment Station.

The addition of adequate riboflavin to the same ration increased the hatchability of the fertile eggs to over 75 per cent in the course of two weeks. When the riboflavin was omitted from the ration again, the hatchability of the fertile eggs dropped from 80 per cent to less than 5 per cent in two weeks.

Short-time Trapnesting as a Guide in Selecting Breeders

In an effort to determine the reliability of trapnesting during the winter months only as compared to year-around trapnesting, I. M. Lerner and L. W. Taylor carried on a series of tests at the University of California. The results, as reported in Poultry Science (Vol. 19, No. 3) indicate that in breeding procedures where the number of eggs laid is the only measure of breeding worth employed, trapnesting for the winter months is as efficient a guide to family selection as is trapnesting for the full year. Neither system is adequate if the records of dams alone are used.

To compensate for loss of information with short-time trapnesting, observations on maturity, pauses, broodiness, and persistency must be made. These other factors need be considered in an efficient breeding program.

❧ WHEN part of a very old fresco was cleaned in the Schleswig Cathedral eight pictures of turkeys emerged, according to the New York Times. The discovery is of importance because the turkey is supposed to have been first introduced into Europe by Spanish connquistadores in 1519. The Schleswig fresco, however, goes back to the thirteenth century. Scholars conclude that the Vikings must have anticipated the Spaniards and brought turkeys to Europe long before Columbus set sail for America

778 Poultry Organizations in United States

In an effort to determine the number, type, and extent of poultry organizations in the United States, the Poultry Section of the Agricultural Adjustment Administration recently completed a nation-wide survey. The results at the beginning of this year show the poultry industry is well represented by 33 national and regional organizations, 602 state production and marketing associations including cooperatives, and 143 specialty breed clubs. These make a total of 778 organized groups in the country associated for the purpose of fostering some phase of the production or marketing of poultry products. This does not include 13 exchanges located in various cities that deal in eggs. Further inquiry shows that the press of the industry is represented by 37 poultry and egg magazines and newspapers.

An analysis of this survey shows some rather interesting results. The 602 state organizations are made up of 279 production groups and 323 marketing and cooperative associations. In the production field there are 41 state hatchery associations, while the balance cover breed improvement and general production problems. The state marketing organizations, totaling 323 associations, include 244 cooperative poultry (turkey) and egg groups. Of these, 26 are poultry and egg auctions, 107 turkey marketing co-ops, and the balance poultry and egg cooperatives.

The specialty breed clubs, totaling 143, are in the majority of instances national or regional in their representation. Plymouth Rocks and Leghorns are both represented by 10 organizations each, while Wyandottes are fostered by 9 organizations. There are 25 clubs representing miscellaneous utility breeds and 31 promoting the rare breeds. Bantams have 14, and turkeys 9 associations.

The number and type of production and marketing organizations in some of the states is also worthy of note. In the production group, Florida leads with 34 associations, Maryland 20, New York 18, and Massachusetts a close fourth with 17. In the marketing classification, Montana leads with 30 associations, a number of which are turkey cooperatives. Missouri has 24 marketing organizations, New York 23, and California 19.

New York is the most organized state in the Union with a total of 41 associations. Florida has 36 poultry associations and Montana 31.

Production and marketing organizations are equally represented as to numbers of associations in Arkansas, Colorado, Kentucky, Louisiana, Maine, and Tennessee.

—J. W. Kinghorne, American Poultry Journal, April, 1940.

Diary of a Poultryman

By P. S. WHITE

Wayne County, Ohio

June 1—'Tis rare, this day in June. A good rain last night, warm and muggy today. And it will be rarer still if Old Coxy doesn't start on the rampage.

June 2 — Herbert Alp, extension poultry man of Illinois, and a delegation were visitors this afternoon. They were visitors at the auction, wanting to see the innards of that institution on sale day. Returning home over U. S. 30, they dropped in for a casual visit.

It is a pleasure to have congenial visitors: it helps to break that old daily grind. The old nose-on-the-grindstone feeling is the effect of that grueling, daily routine. It is necessary to be routine with the work in order to be efficient. A business run in a slip-shod manner today is headed for the rocks.

June 3 — Visitors often ask if I don't get tired, packing eggs at all hours of the night after a day's work. Of course, I get tired physically, but never mentally. When the feet ache, the brain often becomes clouded, but the next night I am right back again.

Candling eggs fascinates me. There are no two alike. If the shell texture is similar, the contents may differ in appearance. Sometimes these two points do not apparently differ, but the exact location and shape of the air cells are not the same. In all cases, each individual egg is being graded according to my visionary criterion of the grade. Dr. Mary E. Pennington recently said that egg candling was still pioneer work in the jungles of today's poultry industry.

June 5—I have looked upon the droppings, and they are red. It was like slipping on a banana peeling—such a funny feeling. Old Coxy, like Coxey's Army of old, is on the march. As Charlie McCarthy says, "it will mow them down."

While a few irregularities in chick rearing are not to be sneezed at, I am not particularly disturbed. A slight touch of Old Coxy here and there should not prevent the wheels of industry from turning. A slight touch and an epidemic are two decidedly different articles. I am always pessimistic enough to expect the worst. While it is a poor policy to cross the bridge before one comes to it, it is also a good policy to realize that there might be a bridge to cross.

Unpublished material prepared for Everybodys Poultry Magazine, Hanover, Pa.

June 6—The auction boys are still complaining about egg quality. It seems that so many producers have turned their hens outdoors and, of course, this means grass eating. Lots of grass means a dark colored yolk in most cases. A dark colored yolk means a lower grade egg and, consequently, a lower price. The producer complains about the price and the buyer complains about the quality of his purchase. It is a vicious circle, " 'round and 'round she goes and where she stops no one knows."

June 7—The boys are still at work stretching the orchard fence. There is about an acre and a quarter of land involved, but there are nine different stretches to make. This is due to the cut-up shape of the orchard. The light fence that I stretched five years ago has completely rotted out. It simply went to pieces everywhere. I have learned a lesson that I should have learned years ago, and that is to build a fence right in the first place. This means use heavy fencing and good posts set plenty deep. The original cost is more, but in the long run it is much cheaper.

June 8—I really don't think that this little touch of coccidiosis is going to be very severe. I noticed a couple or so standing around this morning, but as far as that goes, there are usually a few sticking around that don't look so hot. Neither do I see so many bloody droppings on the range, but perhaps I am just getting used to that phase of the situation.

Visitors this afternoon complained bitterly that about half of their chicks had been incinerated due to coxy. My summer incinerator happens to be a stove in the tool room. We were talking just outside of the building, and the smoke was rolling out of the chimney. I didn't say anything about what we were burning; they evidently didn't smell flesh and feathers burning. Maybe they were just too polite to mention it. It is a relief to hear others admit that they burn stock, if only occasionally.

June 10—There is a new crop of sparrows hanging around the ranch. Guess they are the early hatched birds, but it certainly hasn't taken them long to find the range feeders. I don't like to have them hanging around, but it seems that there is very little I can do about it. And the sparrows are only half of it. Starlings are increasing in numbers each year. During the day very few starling are seen, but around sundown they begin to gather in to roost in the evergreen trees I planted 12 years ago. Thousands of them, millions with all probability, for I am bewildered at my own ignorance. I am a wee bit dubious about using the shotgun, for there are quite a few robins in the crowd. I would probably run afoul of the long arm of the law.

June 12—It seems to me that this bunch of young stock eats an awful lot of feed. A ton of feed lasts a little longer than it takes to put it in the hoppers, but it certainly doesn't last long. I am casting my eye over the cockerels all the time. They are real roosters when it comes to eating and fighting, being exceptionally proficient at both. But they are approaching frying size, which means that they won't be sticking around here very much longer.

June 14—I don't have any particular kick coming, but I wouldn't be a real chicken man if I didn't grumble about something. These feed bills are going to get up into real money by the end of the month. Some days the auction chicken buyers want pound and a quarter stock, and the next time pound and a half and heavier.

I have about come to the conclusion that the buyers are as contrary as the producers. In order to hold up my end of the contrariness, I culled out three coops of old hens. One coop was running-gear soup stock. Their long suit was the fact that they did have some feathers on them.

June 15—I could feel Harold Sidle, auction chicken inspector, looking at me all the time he was examining the third coop of hens this morning. Information, well I wasn't putting out nothing – nohow. But I don't think I fooled him, for I noticed he marked the coop "As Is."

June 16—Every Friday morning I have a regular white collar job, and that is going to the bank. It isn't a white collar job to "wrastle" a load of feed, so I just go to town in my everyday work clothes.

I never realized that Kid White did have such an artistic temperament until I discovered why folks looked at me so queer. Instead of wearing 10-inch cuffs on my new overalls, Kid White simply cuts the legs off before I wear them. After they are washed, they look like they were cut for high water. And brand new patches on thread bare overalls is like putting new wine in old skins. No wonder folks looked at me as I walked down the street wearing overalls half new and half old.

June 17—Donn White has a steel trap set on top of a 20-foot pole which is lashed to a gas well casing. The idea is that such a pole provides an ideal place for a hawk to light while he casts his eye over prospective meals. Some folks say that owls do the same. We have both, so to catch either one would be considered superb trapping for us. Varmints that fly in the air can't very well be gassed, but we sure give them the works when we get them in a hole in the ground. Donnie found a new series of holes back in the pines this morning. It is very seldom that a hole is opened after he gives it a good shot of cyanide. The varmint stays put.

June 19 – Yesterday was the Old Man's birthday. When a fellow gets to be 44 years old, it is high time he knew a thing or two—if he is ever going to know. But I am frank to admit that as the years go by, I feel that I know less. I don't know anything but the chicken business, and very little of that.

Almost every day, at least a couple of times a week, a new problem has to be solved. Right now I am somewhat undecided about starting to sell the cockerels. It will be about a six week's job to dispose of all of them. If I start too early, they will be small, but if I wait too long, the last ones will be heavier than the trade desires.

June 20—Donnie made a few test weights on the cockerels and they were not found wanting, averaging 1½ pounds for the larger ones. Guess we will start catching them Thursday about 4 a.m. This will be a nice time to start the day's work. So much more work can be done if one starts early.

June 21—I am simply making too much money for a chicken man, so Kid White and I are going to spend some of it. We are going to box in the front porch and make an office out of it—a sanctum sanctorium for the Old Man, so to speak. Howard Cobbler and his crew of carpenters started this morning.

Tomorrow morning we are going to start reducing the feed bills by selling a bunch of young roosters. The truck has already been loaded with the empty coops.

June 22—It seemed like yesterday that we were catching up market cockerels, and yet it has been a year. The records show that it has been a year to the day, with the exception that last year it was on the 23rd of the month. The records also show that the birds averaged one-tenth of a pound heavier last year than today. I am consoling myself by saying that I happened to get a few small ones in the coops this morning. But the big idea is that this bunch has gone, and that there is just 300 less crops to fill. Next week I hope to dispose of 500.

June 26—Donnie and I finished the regular morning work with the chicks and then I came to the house. I am now a carpenter's helper. Paul Maurer is the carpenter on the front porch office job, and I do the sanding for him. The ceiling and walls are being finished in black sweet cherry lumber; the wainscoating is solid walnut. Verne Chamberlin and I bought the cherry trees last winter, and I am using my share in the office. We also bought 2,000 feet of walnut lumber.

June 27—Ralph Sheppard, egg inspector, led me off to the side for a quiet lecture on egg quality. It seems as if these egg producers are letting the quality slip a wee bit. Eggs of the larger producers are holding up in quality better than from the smaller ones. This is probably due to the fact that the smaller producer is a general farmer, who at this time of the year is busy in the fields. Wheat harvest is just around the corner.

June 28—I am trying to keep the temperature in the egg room as low as possible. It is a rather difficult thing to do, but I have noticed that the temperature is lowered a few degrees when the burlap on the cooler is flooded. Pouring a couple of buckets of water on the floor also helps. In about an hour the air guide shows that the relative humidity has advanced from 5 to 10 points.

Today's reading was temperature 58 degrees and relative humidity 72. I would have liked for the temperature to have been lower, but this was the best that could be done. After the sun goes down the ventilators are opened; in the morning, they are closed. This not only changes the air in the room, but helps to lower the temperature during the day. It all helps toward that illusive interior egg quality.

June 29—A letter today from W. H. Vernon, extension poultryman of Iowa, stating that he and the family will be through here the 27th of July and would like to spend the night. He and I will have a good visit as it has been well nigh on to a quarter of a century since we were graduated from the State College at Raleigh, N. C. Twenty-five years knocks a fair size chunk out of any one's life; much water has flowed under the bridge since we last saw each other.

Five hundred cockerels were marketed today and this knocks a fair-sized hole in the young stock. Here is hoping that it knocks as large a hole in the feed bill, but I doubt it. The bigger they grow, the more they eat and "visey-versey" as Andrew H. Brown, of Amos and Andy fame, says.

June 30—Here it is the last day of the month, and the first half of the year has passed. If I can be as prosperous the last half of year as I have been the first half, it is a sure cinch that I won't be able to retire from the chicken business. It is beginning to look to me as if the old nose is going to be kept on the grindstone for quite some time to come. Kid White says that I wouldn't be happy doing anything else, which is probably correct.

Nests for Turkeys

Barrels, boxes, automobile hoods, sweat boxes for raisins, old doors leaned against the wall, about everything one could conceive of are used for turkey nests; all of them, depending on local conditions, with more or less success. Someone once made the statement that it was the turkey hen that had to be suited, that as long as a nest did that anything would do. But there are other factors, entering into the picture, two of which are of real importance. One of these is the matter of the hens' smothering when a number pile into the same nest, the other is cracked or broken eggs.

The tendency of several or even a score or more hens laying in the same nest causes many hens to be lost through smothering. Where the nest is small and poorly ventilated, several hens will pile up and often it is just too bad for the hen underneath.

Then there is the cracked and broken egg problem. Where one egg is in the nest, or even a number, the hens all try to get it under them and cracks are a frequent occurrence.

To overcome these objections, some growers have been building a larger and better ventilated nest and filling it with shavings or rice hulls. The nest is built about 3 feet by 6, with an 8-inch board around the base. The sides are covered with burlap or lath spaced about half an inch apart, the roof is hinged for easy access. On the floor, which should be of dirt, is placed 5 or 6 inches of either sawdust, shavings, or rice hulls. The opening is placed in one end. With no partitions and plenty of room, the hens are not prone to pile up; if they do, the good ventilation cuts the smothering to a minimum. The rice hulls or shavings allow the eggs to sift down to the ground and be covered over; they are not an object of controversy between the different hens. It is a bit difficult to gather the eggs, one must needs paw over the nesting material, but this is a minor matter compared to the cracks that are avoided. One such nest will do for 15 to 20 hens.

—Norbest Turkey News, Feb. 1940.

WHEN Horace McFall of Mortonsville, Kentucky, recently agreed to pay for turkeys killed by his two dogs, Circuit Judge William B. Ardery agreed to dismiss the cases against the dogs, but ordered them banished for life from Kentucky, according to a newspaper item.

THE MYSTERY of what was causing the disappearance of young chickens on the farm of Mrs. Stevens, Harper, Texas, was cleared up, accorling to the American Field Magazine, when Mrs. Stevens caught a young deer, which had become a pet of the family, devouring the chicks.

"Palatability" of Poultry Feeds

By RAY EWING
National Oil Products Company

Excerpt from Feedstuffs

A PALATABLE feed is one appealing to the taste. A further assumed advantage of a variety of feeds is palatability. The term is frequently misused with reference to poultry feeding, attributing palatability to poultry feeds where only familiarity is involved. Generally speaking, all common feedstuffs, if they are sound and "sweet," are palatable to chickens.

This lack of discrimination is explained by the low stage of development of the organs of smell and taste in the fowl. Thus, while most feedstuffs are palatable to chickens, which will freely eat feeds to which they have been accustomed, they are sometimes sensitive to abrupt or extreme changes in feed.

Change in Feeding Disliked

Where they have not been used to yellow corn, it is at first nearly as hard to get them to eat the new feed as to change them from corn to barley, or from barley to oats. This fact, however, does not justify the classification of corn or barley, or any other grain, as an unpalatable feed.

Chickens habitually like what they are used to and mostly dislike anything else until they have become familiar with it. As a general rule, birds may be more easily trained to eat wheat or corn than barley or oats. Whether this can be explained by the fact that the hard hull is difficult for the digestive tract to take care of at first is not known. Sometimes that seems to be the explanation, because barley or oats, softened by soaking or grinding, seem to be consumed as eagerly as any other grain.

Any feed tending to upset normal digestion and thereby putting the bird out of condition cannot rightfully be classed as unpalatable, since the lower feed consumption is the direct result of the effect on the bird rather than of the palatability or lack of palatability of the feed. For example, rye in appreciable amounts will decrease feed consumption.

Coarseness Affects Consumption

Physical consistency, if too fine, will seriously affect consumption. A ground feed should, therefore, be of fairly coarse consistency. Where economic conditions make the use of a fine commodity advisable, it is well to counterbalance the one fine feed by the inclusion of others that are correspondingly coarse. For example: Many manufacturers are forced to grind such grains as oats or barley very fine in order to also have the hulls ground fine and show up little in the finished product and, incidentally, so that their competitors will not point out the hulls to their customers as being screenings, etc. When these grains are ground fine, then it would be wise to counterbalance by grinding the corn and wheat coarse that will be fed in conjunction with them.

Miller Publishing Company, Minneapolis, Minn.
(Feedstuffs, December 16 and 23, 1939)

In a recent test, where 48 different samples of commercial laying mash were shown to over 1,200 poultrymen, over 1,100 of them picked out the medium coarse ground mashes as the type they would personally prefer to feed. There were a few of the samples of mash very finely ground, and it was interesting to note that not a single poultryman out of the 1,200 selected one of those samples.

The Ohio Experiment Station ran palatability tests with pullet layers with the following results in feed consumption in 11 months' time:

	Lbs. mash Coarse	Lbs. mash Fine
80 Barred Rocks consumed ..	80	56.4
100 White Leghorns consumed	100	70.2

Following the palatability tests, three tests were conducted with Leghorn pullet layers to determine how egg production and feed consumption might be affected by coarsely and fine ground all-mash mixtures.

AVERAGE FOR 48 WEEKS

	Eggs per bird	Feed per bird	Lbs. feed per doz. eggs	Mortality
Coarse ground mash	127	66.55	5.73	18.70
Fine ground mash	109	61.92	6.18	22.70

16.5% more eggs — 7.5% more feed — 7.4% less feed per dozen eggs.

In a recent palatability test conducted by the Nebraska Experiment Station, 200 Leghorn layers consumed

270 lbs.	coarsely ground mash
175 lbs.	medium ground mash
115 lbs.	fine ground mash

The birds had free and equal access to the three mashes, which were the same except for the size of the particles. The grain and alfalfa were passed through a ⅛, 1-16 and 1-32 inch hammer mill screen, respectively, and other ingredients were all the same.

GRAY DEWEY, Healdsburg, Calif., tells us that he has had 100 per cent success in breaking the habit that some hens have of laying on the roosts. He catches them in the act and puts them into nests that he can close. He says that when they lay at least one egg in a nest, they have never gone back to roost laying.
—Hogsett's Chicken Chatter, May, 1940.

Building for Strength

Nails afford one of the commonest and simplest ways of fastening wood together. The strength of a nailed joint, unlike a bolted or riveted one, depends on the frictional contact of the nail with the wood fibers. Good nailing practice consists largely in selecting the proper kind, size, and number of nails to be used, and then employing the proper way in assembly to insure necessary frictional contact between the nail and the wood, say engineers at the U. S. Forest Products Laboratory, Madison, Wisconsin.

To secure the greatest strength in nailing wood, to avoid accidents resulting from improper nailing, and to eliminate weak and faulty construction require care in observing a few important details. Use nails of proper length and, wherever possible, the nails should be long enough so that in soft woods about two-thirds of the length goes into the piece receiving the point. This means that the length of the nail should be at least three times the thickness of the outer piece. Where the thickness of the pieces does not permit this depth of penetration, a sufficient number of nails should be used to provide equivalent area of contact in the wood receiving the point.

Drive nails so that the points do not come out of the side of the piece. These "shiners" not only result in weakened joint, but are also a cause of injury. Be sure the nails you use do not split the wood, for splitting greatly weakens the joint. If the wood tends to split badly use a thinner nail, blunt the point, or better still, purchase blunt-pointed nails. Use plenty of nails, as the strength of the joint increases directly as the number of the nails.

Nails driven into green wood that later dries out very commonly lose most of their holding power, therefore, use dry lumber. Nails are more efficient when driven into the side grain of dry wood than when driven into the end grain.

—Wisconsin Agriculturist and Farmer.

◀◀ RURAL letter carrier Thomas J. Barnes, McMinnville, Tenn., found this note, along with an egg, in the box of one of his patrons: "Mr. Barnes, take this egg and leave me a postal card, please." Barnes obliged, and had the egg next morning for breakfast, the newspaper article relates.

◀◀ NOT KNOWING what egg cartons are, the native Venezuelan often uses corn leaves, into which two eggs are wrapped neatly. The leaves serve as a cushion, and help keep the eggs from breaking in transit, and also keep them a little cooler.

—Hans Gluck, Pacific Rural Press, Feb. 10, 1940.

Fowl Pox in Turkeys

By W. R. HINSHAW
University of California

Condensed from the San Diego Poultry Journal

FOWL Pox is characterized by the formation of pustules and scablike processes. It is caused by a filterable virus. Birds of all ages are susceptible, but one outbreak produces immunity for at least a year.

Symptoms and Autopsy Findings

The first indication is the appearance of minute yellowish eruptions on the dew-lap, caruncles, and other head parts. They are soft and in this pustular stage easily removed, leaving an inflamed area covered with a sticky serous exudate. The corners of the mouth, the eyelids, and the mouth membranes are commonly affected. The lesions enlarge and become covered with a dry scab or a wartlike mass of yellowish-red or brown color. The number of lesions depends on the virulence of the disease. In young poults, the head, legs, and feet may be completely covered with pustules. The disease may even spread to the feathered parts of the body.

Males often suffer more than females from the disease, probably because of their inclination for fighting, which spreads the infection through small lacerations.

The mouth parts, the tongue, the esophagus, and occasionally the crop may be covered with masses of soft, yellow cankers closely adhering to the mucous membranes. These yellow, diphtheritic ulcers of fowl pox must be differentiated from the small, deep-seated, irregular, diphtheritic ulcers or cankers often seen in the mouths of turkeys and not associated with typical head lesions. These cankers are common in turkeys that have been vaccinated against fowl pox or that have recovered from an outbreak. Their cause is not known.

There are no internal lesions that are characteristic of the disease.

Course and Mortality

There is a marked difference in the severity of cases of fowl pox in turkeys and, consequently, in the course of the disease. Whereas mild cases may clear up in two or three weeks, severe outbreaks often last for six, seven, or even eight weeks. The canker or mouth types take longer to clear up. In such cases, starvation is the cause of death. Blindness often occurs, after the

The San Diego Cooperative Poultry Association, San Diego, Calif.
(The San Diego Poultry Journal, Jan. 25, 1940)

closing of the eyes by severe infection of the eyelids. When the eye is involved, a yellowish cankerlike lesion develops on the mucous membrane of the lid.

Flock mortality is usually low, most of the losses being caused by blindness or starvation. Setback in development and loss in weight are of greater financial importance in the growing flock than loss in deaths. As outbreaks commonly occur a few days or weeks before market time, it is often necessary to postpone killing the birds for several weeks. If the flock escapes an outbreak before market time, the disease sometimes appears in the breeding flock and causes severe losses through lowered egg production and poor fertility.

Prevention

Vaccination with live-virus vaccine, together with the usual sanitary program, is the recommended method of preventing fowl pox in turkeys. The problem differs from that in chickens because in the latter the effect of the disease and vaccination on egg production must be considered in the preventive program, while in the former a meat-producing bird only is involved. Furthermore, healthy turkeys respond to vaccination, even when virus of chicken origin is used, with little or no systematic disturbance, such as sometimes follows vaccination of chickens. Consequently there is no need for using a less virulent strain of virus—for example, one of pigeon origin.

Vaccine of chicken-pox origin produces a solid immunity in turkeys for at least one year. All the common methods of inoculation of the vaccine have been found equally efficient when properly followed.

Need For Vaccination

Fowl pox is so widespread in California that yearly vaccination of all turkey flocks is a good insurance policy. The one exception to this general recommendation is the flock well isolated from all chicken flocks and located in a community where the disease does not exist. Since the vaccine used for immunizing a flock contains live virus, capable of spreading the disease, it cannot safely be introduced into a flock or a community where fowl pox is unknown.

The disease is probably carried to new areas by mosquitos, birds, visitors, animals, second-hand feed sacks and the introduction of new stock.

Age For Vaccination

Healthy turkeys can be vaccinated at any age. Dunn and Sherwood have successfully vaccinated day-old turkeys. Many California growers have vaccinated successfully at six or eight weeks of age; the majority, however, at ten to twelve weeks. Extreme care must be taken when vaccinating very young poults, to prevent the vaccine from getting on parts of the body other than the area to be treated.

As it requires from four to eight weeks for the vaccination lesion (take) to disappear completely, turkeys should be vaccinated at least eight weeks before market time. July, August, and September are desirable months for vaccination in most sections. Ample time is then allowed for the flock to develop immunity before the period of the greatest danger of infection, namely, October to June, and for the vaccination areas to heal before any birds are killed for market.

Breeders kept for more than one year should be vaccinated each year because a small percentage of them will have lost their immunity after one year.

Purchase and Care of Vaccine

Vaccine should be purchased only from reliable sources. It must be kept and used strictly according to directions given by the manufacturer and must be stored in the refrigerator when not in use. One-half day's supply, only, of the concentrated product should be diluted at one time; and this should be protected against undue heat and exposure to the sun's rays. In hot weather it is advisable to dilute only enough of the concentrate for an hour's use unless the diluted portion can be kept packed in ice. All diluted vaccine not used during the time for which it was prepared should be discarded.

Disinfectants should never be added to the vaccine, nor should the container for vaccine be rinsed in a disinfectant unless it is later rinsed well with water and dried before use. Instruments and brushes for applying the vaccine should not be kept in disinfectants unless they can be thoroughly rinsed before used. When the stick method is employed, the knife point should be wrapped with clean, fresh tape daily.

Technique of Vaccination

There are two general methods of applying the vaccine; the feather-follicle and stick, or puncture, methods. The feather-follicle method consists in pulling a few feathers and inserting the vaccine, with the aid of a brush, into the feather follicle. The stick method consists in pricking the skin with a sharp instrument previously dipped in vaccine. A modification of the puncture method is the scarification method, in which the skin is scratched, with a roughened metal surface that also serves to carry the vaccine into the injury.

Some modification of the stick method is most common today, and it has many advantages over the feather-follicle method, among them being economy in the use of vaccine, greater speed in the application of vaccine, and better control of the amount of vaccine inserted and of the number of lesions or takes produced.

The skin of the upper thigh has certain advantages over other sites for routine vaccination: these are easy accessibility to the operator, absence of feathers, and inaccessibility to the vaccinated birds or their penmates. The last point is important from the standpoint of the spread of fowl pox by fighting before immunity has been established.

It is inadvisable to vaccinate on the wing web during the late fall rainy season, for dampness and moisture foster the spread of lesions over as much as half of the wing-web area. Turkeys pick at the vaccinated area of the wing-web, and probably cause the spread of lesions to the head, which seems at times to follow wing-web vaccinations.

The larger caruncles at the base of the unfeathered part of the head furnish a convenient area for vaccinating and for observing later the results of vaccination. On the other hand, this area has two disadvantages in the proximity to the most susceptible parts of the body and in its open exposure to other turkeys. No serious spread from this site of vaccination has, however, been observed; and the immunity conferred has been as good as in the case of any other vaccination area.

A site for vaccination which is adaptable to certain conditions is the small web of skin between the first digit of the wing and the metacarpus. This area is suggested when, for some reason vaccination has been delayed until three or four weeks before market time. A small unhealed vaccination scar on this spot will not impair the value of the bird when it is graded for market. Being less convenient than the leg, however, this location is not recommended for routine purposes.

Handling the Turkeys

The method used in handling the turkeys will, in a large measure, determine the number that can be vaccinated in a day. For large flocks, two adjoining corrals with a chute between them for confining a few birds in close quarters are essential. The system must be turkey-tight so that unvaccinated birds will not escape into the vaccinated group. A table at a location convenient to the catching chute provides a good surface for holding the bird, as well as the vaccinator's apparatus. A helper may hold the turkey and expose the area to be vaccinated, so that the operator need not touch the bird. Helpers should avoid handling the vaccine, and every precaution should be taken to prevent its being spilled.

If the upper-thigh location is used for the site of vaccination, the helper holds the feet of the bird with his right hand.

The vaccinator pulls back the feathers lying along the thigh to expose the skin, inserts the instrument (which has been dipped in the vaccine) into the skin, and makes a very slight incision. If the single-point knife is used, this procedure is repeated once or twice, at places ½ to 1 inch apart, without renewing the vaccine. Two or three punctures of the skin are ample. The helper then places the bird in the vaccinated quarters. The helper can also expose the vaccination area for the vaccinator, but he should avoid getting his hand into the vaccine in allowing the tuft of feathers to fall back into place. After each inoculation, the vaccinator mixes the vaccine thoroughly, using his operating instrument, which at the same time picks up a new supply of vaccine for the next inoculation. The most important points to be kept in mind during vaccination are to use fresh, potent vaccine and to be certain that the vaccine is inserted into an injured skin. Accuracy should not be sacrificed for speed.

The general location mentioned above can be used if the feather-follicle method of inoculation is preferred. Not over four or five feathers should be pulled, and care should be taken to be sure that vaccine has been brushed into the follicle. The small baby-feather follicles are as sensitive to the vaccine as the large pin-feather types.

All unused vaccine, together with the containers, should be burned or placed in disinfectant for several hours to prevent the spread of virus. All cotton, tape, and thread wraps and papers should be removed and burned. Instruments should be put in some good disinfectant for several hours and then thoroughly rinsed with boiled water, or they may be boiled for 10 minutes.

Post-Vaccination Care of the Flock

If the flock is in good healthy condition, it need receive no special care after vaccination. Sometime between the eighth and the twelfth day, at least 25 per cent of the flock should be examined to determine whether the vaccination has been successful. If all of the birds in such a sample have one or more vaccination takes, the flock can be considered properly immunized. If not all have reacted, the entire flock should be handled, and the non-immunized birds should be revaccinated with a fresh lot of vaccine. As the birds cannot be considered immune until about one month after vaccination, precautions should be taken to prevent introduction of the disease until after that period. A few vaccinated birds may develop lesions on the head, but these usually clear up within a short time without any severe symptoms. It is well, however, to isolate such birds from the remainder of the flock to prevent spread by fighting before immunity is established.

Control of An Outbreak

If fowl pox appears in a flock, the

following procedure is recommended:

1. Isolate all birds showing lesions.
2. Vaccinate as soon as possible all birds not showing lesions.
3. Place infected birds in warm, dry quarters if available.
4. Separate the males or keep careful watch over them to prevent fighting.
5. Treat infected birds individually by removing the scabs and touching the wounds with iodine, if time permits and the expense warrants it. An iodine ointment applied liberally over the infected area will aid in reducing the spread of the disease and will shorten the period of convalescence. Saturated boric acid solution is recommended for washing the eyes.
6. Individual feeding of valuable birds with the aid of a funnel and rubber tubing inserted into the crop may be advisable in severe cases.

Since loss of flesh and slowed-down development are the chief causes of economic loss in most outbreaks, careful management and attention to the feeding program during and after an outbreak are essential to a speedy return to normal. The course of the disease can be shortened by the use of shelters for roosting and by general protection from damp weather.

"Don't Let Hens Coast"

There is a tendency on many farms to let the layers coast along during the hot summer months. Reasons for this are: other farm work makes greater demands upon the farmer's time; egg prices are not very high as a rule; and egg production stays up fairly well until mid-summer. But allowing the birds to "coast" is a mistake. They need constant and careful attention.

Feed hoppers must be kept filled, water fountains filled often with fresh water, mites and lice must be held in check, ventilation watched so as to keep the birds comfortable, eggs must be gathered often and kept cool, and the loafers and sick birds must be eliminated. One should also watch for worms, and give treatment if infestation becomes heavy.

—H. E. Klinefelter, The Missouri Farmer, May 15, 1940.

◄◄ AMONG such simple words as opiphagism, ipecac, olebanum, oneirocratic and phanxty, the word "vitellin" had a New York spelling bee puzzled for a spell. Vitellin (a spot on your vest, revealing one's breakfast menu) means—the yolk of an egg.
—Turkey World, April, 1940.

VIEWS OF THE EDITORS

It Pays to Cool and Humidify Egg Room

We are now on the threshold of another summer. In California that means dry, hot weather over most of the state.

Hot, dry air causes eggs to lose their freshness very rapidly. An egg is two-thirds water and the shell is full of tiny pores. Hence dry, warm air currents passing around freshly laid eggs, vaporize some of the water, causing the egg contents to shrink, and the air cell to enlarge. Also, three days at 93 degrees will cause yolks to flatten out more, when broken out, than other eggs held at 44 degrees for nearly two months.

The job of marketing fresh, quality eggs requires greater precautions in summer than in winter. They need to be protected from the ill effects of heat and dryness from nest to consumer's table. And an excellent way for the producer to do this on the ranch between shipments to market is to keep the eggs in a cooled egg room. His eggs grade better and he gets more money for them.

An evaporative cooling unit installed in a well-insulated egg room provides the coolness and humidity that eggs need. Yet it is simple in construction, easy to care for, and low in cost.

The evaporation of water from the excelsior pad as the air is pulled through it by the electric fan builds up the humidity in the room and cools it. The baskets of eggs freshly gathered from the nests are cooled. The cases, fillers and flats are kept cool and damp, the eggs are packed and held in a most favorable environment till hauled to market—and they bring 20 to 30 cents more per case.

—Nulaid News, April, 1940.

Better Chicks Easier to Sell

A season like the present one, where early chick sales have been restricted almost entirely to buyers who know chick values, demonstrates conclusively that good chicks are easier to sell than chicks whose only appeal is low price.

Reports from hatchery after hatchery with a real breeding program back of their chicks show that it has been easier to sell 10 to 12 cent chicks so far this season than it has been to sell six to eight cent chicks. One hatcheryman with well over a quarter million egg capacity states that he has been oversold all season on his best grade chicks at prices ranging from 10 to 12 cents per chick for the different breeds, while his "Heavy Assorted" grade offered at a competitive price of 7½ cents have gone begging, and have had to be brooded out.

This does not mean, of course, that plants with a program that produces chicks worth only seven or eight cents, could enjoy better business by raising their price to 10 or 12 cents. It does show, however, that chick producers who have real quality in their chicks are the ones who find the going easiest when the volume of total chick sales is somewhat limited, as it has been during the early part of the present season.

When chick demand is brisk, there are always quite a few people who buy chicks without much regard to the results to be expected, and under these conditions low price has a definite appeal to a large body of buyers. These are, however, for the most part the "In and Outers" of the poultry industry, and in many cases they never return as customers to the plant that sold them cheap chicks.

On the other hand, when the more substantial type of buyer finds a source of chicks that is satisfactory he is rather likely to send in repeat orders year after year, during both good and bad chick selling seasons. Hence a buyer of this type has to be sold only once if the chicks he receives make good; whereas, a large per cent of the customers who are attracted by low prices do not come back year after year, and the cost of getting new customers every year is expensive—too costly in fact to make the production of low priced chicks profitable over a period of years which will include both good and bad seasons.

—T. S. Townsley, Smith's Chickagrams, May, 1940.

Fewer Pullets

Pasture land has good body with its deep, green grass, and the ground is warm and mellow, after one of the latest springs on record. Pullets an range look as though they would make good profits. There aren't so many of them through the country this year. The output of the hatcheries has been estimated as 10 to 15% off in some sections, and as much as 25 to 33% below last year's chick production in a few localities.

It has not been a satisfactory spring for the egg farmer. The cost of feed in relation to the selling price of eggs has been unsatisfactory, and in some cases downright discouraging. This, however, has been looked upon as a temporary condition by those who have gone ahead with their rearing operations. They already see that the unprofitable broiler business of last December and January, righted itself, and those who had Barred Plymouth Rock cockerels to ship in April faced quotations of 25c a pound, alive, New York City. Broilers sold for 15 to 20c a head more in April than they did in January. Any number of growers have made a profit, although general interest has been lacking in the business of feeding out broiler chickens.

All business enterprises seem to go on in pretty much this same pattern. There are times when everybody is interested and pushing, and then there are periods of quiet. As pointed out last month, the chicken business, as measured by the hatchery output of chicks, appears to have two years of expansion followed by one year of contraction. This is a sign of health and growth. If the poultry business were static, full of maturity and at rest, with all of the growth element expended, then instead of 2 good years and 1 short year, there would be 2 good years and 2 off years. At the end of 10 years, the industry would be right where it started.

Or if the poultry industry were failing, destined to close down, and dying, there would be 1 good year followed by 2 bad ones, like the frog that, trying to get out of the well, went forward one jump and fell back two. Every business has these cycles, and when there are 2 years forward to 1 of recession, as has been the history of the chick business, you will find that the longer line, which shows the fundamental trend, POINTS UPWARD.

—Frank L. Platt, American Poultry Journal, June, 1940.

More Pounds of Turkey Per Capita

The trend in per capita production of turkeys for the past 11 years, as determined by the U. S. Department of Agriculture, is as follows:

1929 – 1.80 lbs.
1930 – 1.77 lbs.
1931 – 1.92 lbs.
1932 – 2.42 lbs.
1933 – 2.54 lbs.
1934 – 2.38 lbs.
1935 – 2.31 lbs.
1936 – 3.14 lbs.
1937 – 2.90 lbs.
1938 – 2.97 lbs.
1939 – 3.68 lbs.

EXOTIC Latin Dancer, Diosa Costello, "whose energetic dancing is the eighth wonder of Manhattan," sleeps 10 hours daily and eats three raw eggs for breakfast. So says Ida Jean Kain, who dispenses diet and exercise advice to women in the Washington (D. C.) Post.

—Bulletin of the National Association of Food Chains.

TURKEYS, tobacco and tomatoes are three popular items credited with being strictly American in origin. The turkey business is said to be the largest animal husbandry industry in the nation, native to America.

—U. S. Egg and Poultry Magazine, April 1940.

POULTRY STATISTICS

Hens on Farms — Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	Apr. 1	May 1	Apr. 1	May 1	Aggregate Jan.-May	Apr. 1	May 1	Aggregate Jan.-May
North Atl.									
1929-38 (Av.)	96.9	90.0	85.9	55.9	59.4	216	50.2	51.0	196
1939	98.4	89.1	84.2	58.0	60.0	237	51.4	50.2	216
1940	97.2	88.2	84.1	55.4	59.1	231	48.7	49.5	208
E. N. Cent.									
1929-38 (Av.)	108.8	101.7	96.4	54.1	58.5	195	55.3	56.6	201
1939	107.3	100.2	93.2	56.1	59.2	215	56.2	55.2	217
1940	110.8	101.7	97.3	52.8	58.4	206	53.8	56.9	215
W. N. Cent.									
1929-38 (Av.)	118.8	112.7	106.8	51.8	56.2	177	58.4	59.9	199
1939	113.1	107.5	102.6	55.7	58.7	200	59.7	60.2	216
1940	118.6	113.6	110.7	51.8	58.7	188	58.9	64.9	216
South Atl.									
1929-38 (Av.)	58.9	53.9	50.4	52.0	51.5	195	28.0	25.5	106
1939	59.9	53.1	49.4	54.8	53.8	215	28.9	26.2	116
1940	59.9	56.3	53.3	52.7	52.8	204	29.5	27.7	115
South Cent.									
1929-38 (Av.)	65.0	58.8	54.4	53.2	51.6	190	31.2	28.0	113
1939	63.6	59.0	55.2	55.8	53.9	206	32.8	29.6	123
1940	65.8	59.9	56.5	53.7	53.0	187	32.1	29.8	114
Western									
1929-38 (Av.)	73.2	68.6	66.4	57.2	59.1	214	38.8	39.3	146
1939	72.6	67.1	62.9	58.6	58.9	227	39.3	37.4	152
1940	73.7	67.4	64.1	59.1	59.1	228	39.5	38.0	153
United States									
1929-38 (Av.)	84.5	78.4	73.9	53.5	56.0	193	41.8	41.0	152
1939	82.8	76.8	72.2	56.3	57.6	212	42.9	41.1	164
1940	85.1	79.0	75.6	53.6	57.1	202	42.1	42.6	160

Farm production of eggs during April totaled 5,033 million, compared with 4,962 million in 1939 and 4,860 million in 1938. While production in April was about 1 per cent more than last year and nearly 4 per cent more than in 1938, total egg production during the first 4 months of this year has been about 2 per cent less than during the same period in 1939, and only about 1 per cent more than in 1938. Although the average number of layers on hand during these 4 months was about 4 per cent larger than in 1939, the number of eggs produced per layer on hand was approximately 4 per cent smaller. All of this loss in total egg production this year compared with last, took place during January and February, when weather conditions were very unfavorable for egg production.

Farm flocks during April carried an average of 304,587,000 layers, or about the same as the 10-year (1929-38) average, but 4 per cent more than in April last year. The seasonal decline on May 1 from January numbers was 8 per cent compared with 9 per cent in 1929 and with the 10-year average decline of 9 per cent.

Fewer hens were culled from the laying flocks during April this year than last and fewer than are usually removed from the flock during April. As a result of the lighter April cullings, numbers of layers are now relatively greater compared with last year than they were a month ago. The gain over the preceding year on April 1 totaled 3 per cent, or about the same as the gain at the beginning of the year. But on May 1 flocks were larger than a year earlier by 5 per cent. Numbers of layers are now 2 per cent above the 10-year May 1 average but 7 per cent below the record high point set on that date in 1927.

Production of eggs per layer in farm flocks on May 1 again lagged behind that of the same date last year, for the fourth consecutive month. This is not surprising, in view of the prevailing late cold spring and the continuing unfavorable price relation between eggs and feed. On May 1, however, hens are normally at the peak of their seasonal egg laying cycle, and their laying rate is least subject to control by management practices, so that the annual variation in rate of production is smallest at that time.

The increase over last year in the number of layers in farm flocks more than made up for the somewhat smaller rate of laying. Average production per flock on May 1 was reported at 42.6 eggs, this being 1.5 eggs or about 4 per cent above the average farm production on that date last year when it was about equal to the 10-year average for May 1. Average production of eggs per flock increased over that of May 1 last year in all areas except the North Atlantic States, where production decreased about 1 per cent. The largest increases were about 8 per cent in the West North Central and 6 per cent in the South Atlantic area.

—Comment of U. S. D. A. Poultry & Egg Production Report.

Receipts of Eggs and Poultry

Since the early part of April, receipts of eggs at Central Western primary markets have been much heavier than during the corresponding period of 1939, the increases averaging about 20 per cent. Prior to this time, 1940 receipts had been lighter than last year. But a seasonal change has taken place in recent weeks. A month ago, substantial weekly increases were reported, but more recent reports have shown first, a tapering off of the percentage increases, and finally, actual decreases. The reduction for

Receipts of Eggs (Cases) at 4 Markets*

Geographic sections	April 1940	April 1939	April % change	Jan. to Apr., Inc. 1940	Jan. to Apr., Inc. 1939	Jan. to Apr., Inc. % change
New England	50,894	35,460	+ 43.5	196,129	151,195	+ 29.7
Middle Atlantic	263,047	202,293	+ 30.0	820,982	759,090	+ 8.2
South Atlantic	47,475	39,919	+ 18.9	116,849	133,290	− 12.3
East North Central	485,855	438,392	+ 10.8	1,202,192	1,174,746	+ 2.3
West North Central	1,215,287	1,212,692	+ 0.2	2,860,284	2,976,595	− 3.9
South Central	14,495	12,549	+ 15.5	57,157	44,751	+ 27.7
Mountain	43,067	20,631	+108.7	157,662	94,444	+ 66.9
Pacific	32,898	20,630	+ 59.5	202,699	93,567	+116.6
Miscellaneous	568	677	− 16.1	1,791	2,095	− 14.5
TOTAL	2,153,586	1,983,243	+ 8.6	5,615,745	5,429,773	+ 3.4

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic sections	April 1940	April 1939	April % change	Jan. to Apr., Inc. 1940	Jan. to Apr., Inc. 1939	Jan. to Apr., Inc. % change
New England	668,965	939,101	− 28.8	2,134,557	2,068,809	+ 3.2
Middle Atlantic	3,957,569	2,903,410	+ 36.3	8,656,794	5,345,805	+ 61.9
South Atlantic	2,271,953	1,713,602	+ 32.6	8,990,533	5,077,258	+ 77.1
East North Central	3,504,137	2,459,547	+ 42.5	12,776,161	12,178,335	+ 4.9
West North Central	6,518,436	5,578,767	+ 16.8	44,385,164	34,343,970	+ 29.2
South Central	1,676,857	1,547,830	+ 8.3	6,677,279	7,636,626	− 12.6
Mountain	53,421	140,004	− 61.8	2,414,302	1,566,410	+ 54.1
Pacific	372,391	311,759	+ 19.4	7,655,573	2,644,205	+189.5
Miscellaneous	0	0	−	0	0	−
TOTAL	19,023,729	15,594,020	+ 22.0	93,690,363	70,861,418	+ 32.2

* New York, Chicago, Philadelphia, and Boston.

the week ending May 18 was 8 per cent below the previous week. Though not an accurate measure of production, these figures indicate that the year's peak has been passed. Pacific Coast country packing plant receipts still exceed those of the 1939 season, as has been the case throughout the year, but weekly reductions have been noted during the past month.

Terminal market receipts of eggs in April were 17 per cent below a year earlier, largely because of lighter arrivals from the North Central States. Since May 1, receipts at the 4 principal eastern markets have been slightly heavier than last year. Shipments to Chicago are largely responsible, as New York City has received approximately 9 per cent less eggs in May this year than in 1939. At Chicago, the increase has been over 12 per cent. Despite the difference in the two markets, Federal Surplus Commodities Corporation purchases at New York were almost as heavy as at Chicago.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
May 4	31	38,552	−0.12	+14.21
May 11	29	39,748	+3.30	+20.02
May 18	32	41,643	−0.17	+18.97
May 25	30	35,075	−3.02	+18.39

—Compiled from U.S.D.A. market reports.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1940	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1940	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1940	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) % Chg.
May 4	311,838	270,506	+15.28	2,316	2,767	−16.28	Discontinued until quantities available are larger.			1,935	2,245	−13.80
May 11	315,147	254,460	+23.85	2,537	2,714	− 6.52				2,117	2,150	− 1.56
May 18	296,465	241,123	+22.95	3,039	2,980	− 1.98				2,225	2,338	− 4.85
May 25	260,315	214,109	+21.58	3,263	3,179	+ 2.63				2,671	2,458	+ 8.64

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	Cases of Eggs No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
May 4	61	82,174	72,255	−1.34	+13.73
May 11	60	78,413	70,169	−3.99	+11.75
May 18	61	76,879	69,042	−2.58	+11.35
May 25	60	75,667	65,915	−0.95	+14.79

—Compiled from U.S.D.A. market reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	Avg. Egg Price per Doz. (Dollars) 1940	1939	1938	Avg. Feed Cost per 100 lbs. (Dollars) 1940	1939	1938
May 2	10.7	9.3	8.0	.188	.190	.220	2.00	1.770	1.780
May 9	10.8	9.3	8.0	.185	.190	.220	1.995	1.770	1.770
May 16	10.0	9:6	7.6	.187	.182	.227	1.910	1.750	1.740
May 23	10.7	9.5	7.3	.180	.184	.236	1.920	1.755	1.740

—Compiled by N. Y. State Dept. of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration 1940	1939	10-Yr. Avg. 1929-38	Price of Fresh Graded Firsts (Dollars) 1940	1939	Cost of Ration per 100 lbs. (Dollars) 1940	1939
May 4	8.05	6.84	6.64	.170	.160	1.369	1.095
May 11	8.11	6.99	6.58	.170	.158	1.380	1.107
May 18	7.79	7.14	6.64	.165	.153	1.285	1.095
May 25	7.92	7.21	6.80	.162	.152	1.287	1.100

—Compiled from U.S.D.A. market reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	1937	1936	1935
April	10.01	7.84	8.54	10.33	7.85	8.40
January-April	9.67	7.32	8.30	9.62	7.48	7.67
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

Heavy purchases by the Federal Surplus Commodities Corporation were a dominant factor in the egg market situation throughout May, the Agricultural Marketing Service reports. Markets were generally easy to weak, showing as a whole a slight downward trend, though prices on certain grades of eggs were fairly well sustained. Active storing interest has lagged, due in part to the uncertainty of future values, and the unwillingness of storing interests to assume risks.

In the futures market at Chicago, October Refrigerator Standards, which on May 1 were slightly above 19¢, and which at one time in late April were almost up to 20¢, closed on May 29 at 17.95 cents. Terminal market receipts have been relatively heavy this month; although the peak of production has apparently been passed, marketings at country packing plants in the Central West and on the Pacific Coast still continue considerably above those of last season.

Purchases of eggs by the Federal Surplus Commodities Corporation during May (including May 29) totaled 578,000 cases, bringing the quantity to 1,147,000 cases since the current buying began in December. Purchases during the week ending May 25 exceeded 100,000 cases, and were the heaviest egg purchases ever made during a single week by the Federal Surplus Commodities Corporation. May purchases were distributed as follows: On the New York Mercantile Exchange, 106,370 cases, and on the Chicago Mercantile Exchange, 133,539 cases. On offers: Northeastern States—60,656 cases; Midwestern States—255,431 cases; Southwestern States—10,800 cases; Pacific Coast States—11,100 cases.

This program obviously supported current egg markets, and helped to prevent egg prices from showing declines. The month's price declines are limited mostly to the lower quality grades and current receipts, although top grades in some markets have declined slightly. Mixed Color Firsts at New York are now 17¼ cents, the same as a month ago; and nearby eggs, as well as Pacific Coast eggs at New York, have remained practically unchanged throughout the month. San Francisco prices of U. S. Extras declined from 19½ cents to 18 cents during May, but other Pacific Coast markets were unchanged. In general, average quality eggs are higher than a year ago, but best quality grades are lower. This means that the range of price between top and bottom grades is narrower this year than last.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

1940 Egg Prices at New York City

Kind	May 3	May 10	May 17	May 24	May 31	May 31, '39
Mixed Color Firsts	18½	18¼-18½	18¼	18	18	16¼
Nearby and Midwestern White Premium Marks	20-20½	20-20½	20-20½	20-21½	20-20½	21½-23
Nearby and Midwestern White Specials	19½	19½	19½	19½	19½	21
Pacific Coast Specials	23¾-26½	24½-26½	24½-26½	24-26½	24-26½	26½-27
Nearby and Western Brown Exchange Specials	19½	19¾	19½	19½	19½	19

Farm Prices of Eggs per Dozen

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
			(Figures given in cents)						
Average 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	23.2	30.1
1938	21.6	16.4	16.2	15.9	17.6	18.2	19.9	24.9	29.0
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	20.6	25.8
1940	18.3	20.2	15.4	15.0	15.1				

Eggs in Storage

Storage Holdings of Eggs

Kind	May 1 5-Year Avg. 1935-39	May 1 1939	Apr. 1 1940	May 1 1940	% Change May '39-May '40
		(Thousands)			
Shell Eggs (cases)	3,581	3,357	854	‖3,309	– 1.1
Frozen Eggs (lbs.)	84,282	88,867	44,199	79,328	–10.7
Frozen Case Equivalent (cases)*	2,408	2,539	1,263	2,267	–10.7
Total (cases)	5,989	5,896	2,117	5,576	– 5.4

*Frozen eggs are converted on the basis of 35 lbs. to the case.
‖Includes 25,000 cases owned by FSCC for relief distribution.

Into-storage movement of eggs has been more rapid this month than it was a year ago. The weekly report covering 35 cities, as of May 25, showed stock in these cities slightly below those of a year earlier, but in the 4 markets, stocks exceed those of a year ago. The June 1 report of total U. S. holdings will probably show approximately the 1935-39 average for that date of 6 million cases. Quantities of eggs in storage owned by the Federal Surplus Commodities Corporation and State relief agencies recently have been increasing rather rapidly, with the prospect that by June 1, such stocks will be about 500,000 cases. In this case, commercially owned stocks would be less than those of a year ago. Last year's total U. S. stocks on June 1 were 5,880,000 cases. A tendency toward lighter stocks of shell eggs has been developing during recent years, partly owing to the increasing importance of frozen eggs. The rate of storing on the latter class of product has been much more rapid than shell eggs during May, and the June 1 total will likely exceed that of June 1, 1939, which was 118 million pounds.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Poultry Meat Prices

Farm Prices of Chickens per Pound

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
			(Figures given in cents)						
Average 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	15.2	14.1
1938	16.7	16.0	15.9	16.2	16.1	15.7	15.0	14.3	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.6	12.4
1940	12.0	12.2	12.8	12.9	13.6				

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Poultry in Storage

Storage Holdings of Poultry

Kind	May 1 5-Year Avg. 1935-39	May 1 1939	Apr. 1 1940	May 1 1940	% Change May '39-May '40
		(Thousand Pounds)			
Broilers	6,981	5,779	6,486	4,518	– 21.8
Fryers	6,432	6,586	4,737	3,228	– 50.9
Roasters	14,510	15,513	15,694	9,860	– 36.4
Fowls	9,566	10,907	17,043	12,369	+ 13.3
Turkeys	17,875	17,832	53,708	43,667	+144.9
Ducks	1,128	1,090	1,472	971	– 10.9
Miscellaneous	10,838	12,861	10,109	8,039	– 37.5
Unclassified			6,193	3,766	.
Total	67,330	70,568	115,442	86,418	+ 22.4

Poultry markets have been more or less featureless in May though prices have shown some fluctuations. Some of the net changes represent slight advances, but hens are lower at Chicago, and fowls were lower at New York late in the month. Receipts of live poultry at Central Western packing plants are still showing increases each week, although lighter than last year. The bulk of these receipts are classed as fowl.

Dressed poultry receipts at terminal markets in April were 36 per cent above last year, but since May 1 have been about the same as in 1939. There has been a much more rapid reduction of frozen poultry stocks during May this year than in 1939, although apparently not quite so rapid as the 5-year average out-of-storage movement. Storage reductions were larger than usual in April, partly due to the heavy turkey movement, which for the second successive month showed a 10 million pound reduction. May 1 total stocks of frozen poultry were 86½ million pounds, half of which were turkeys. In relation to last year, May 1 total stocks were 16 million pounds heavier. Although stocks of frozen poultry are 25 per cent greater than a year ago, the excess of storage reserves has been cut down considerably during May.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Egg Set During April			Salable Chicks Hatched During April			Chicks booked May 1 for May or later delivery			
		1940	1939	% chg.	1940	1939	% chg.	No. of Plants	1940	1939	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	16	1,495	1,464	+ 2	1,598	1,425	+12	11	1,066	1,020	+ 5
Mid. Atl.	38	3,292	3,246	+ 1	2,339	2,315	+ 1	34	886	1,118	–21
S. Atl.	32	2,328	2,001	+16	2,077	1,742	+19	21	755	704	+ 7
E. N. Cent.	101	9,079	9,188	– 1	6,437	6,390	+ 1	90	1,624	2,022	–20
W. N. Cent.	110	13,946	14,349	– 3	10,023	10,409	– 4	97	3,067	3,385	– 9
S. Cent.	35	2,360	2,647	–11	2,198	2,227	– 1	23	71	147	–52
Mountain	22	1,623	1,672	– 3	1,179	1,096	+ 8	17	91	176	–48
Pacific	46	2,236	3,764	–41	2,879	3,958	–27	43	861	1,583	–46
U. S.	400	36,359	38,331	– 5	28,730	29,562	– 3	336	8,421	10,155	–17
Jan.-Apr. Inc.		104,869	117,681	–11	58,416	68,007	–14		55,272	66,919	–17

Four hundred hatcheries, with a combined capacity of 46,410,000 eggs, indicated an April production only 3 per cent smaller than April last year. The April hatch last year was the largest of record for any month. But the cumulative production of chicks by commercial hatcheries — January to April, inclusive—is 14 per cent under that of the same period last year, and the number of young chickens on farms May 1 is far below the February expectation of farmers to buy only 4 per cent fewer chicks than last year.

No large surplus of chicks or distress selling was indicated in April. Reports from 359 plants showed that 90 per cent of their April chicks were sold and delivered, 5 per cent custom hatched, 1 per cent destroyed as sexed cockerels and 4 per cent brooded for later sale or unsold at the end of the month. During April last year 89 per cent were sold, 6 per cent custom hatched, 2 per cent destroyed as sexed cockerels, and 3 per cent brooded for later sale or unsold at the end of the month.

An increase in the proportion of heavy breeds to the total chicks hatched during April compared with the same month last year is indicated by returns from 307 plants. Approximately 43 per cent of the chicks hatched during April were of the light breeds and 57 per cent heavy breeds. The proportions reported for April last year were 46 per cent light breeds and 54 per cent heavy breeds.

Reports from 197 plants showed that the number of chicks sexed constituted 36 per cent of their total April production compared with 33 per cent last year.

The production of turkey poults in April was 12 per cent smaller compared with April last year. Reports from 124 plants showed 1,062,000 poults hatched in April compared with 1,202,000 last year. An increase of 5 per cent in the number of poults hatched was reported for the West North Central States, the East North Central States and the South Central States. All sections reported comparatively large decreases in the number of poults booked for May 1 for May or later delivery. Sixty plants over the country showed a decrease of 32 per cent in the number of poults booked May 1 compared with the same date last year.

—Comment from U. S. D. A. Hatchery Report.

Poultry Canning Operations

Poultry Canning Operations During April, 1940

Commodity	Quantities reported to date for April 1940	Quantities reported for Mar. 1940	Same Firm Comparison		
			Apr. 1940	Apr. 1939	% change in 1940
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	5,147,556	4,855,523	5,147,556	2,745,395	+88
Number of firms reporting	19	19	19		

Egg Breaking Operations

Egg Breaking Operations During April, 1940

Commodity		Quantities reported to date for Apr. 1940	Same Firm Comparison		
			Apr. 1940	Apr. 1939	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		9,781,806	9,728,853	8,188,049	+19
Mixed eggs (plain)		1,016,885	1,016,885	927,830	+10
Mixed eggs (emulsions, also with sugar, salt, etc.)		2,998,425	2,998,425	3,553,930	−16
Egg whites (all descriptions)		12,948,067	12,814,992	10,272,195	+25
Egg yokes packed	Without salt, sugar, etc.	3,425,719	3,333,420	2,856,629	+17
	With sugar	5,205,443	5,200,633	4,050,234	+28
	With salt	3,073,138	3,073,138	2,301,416	+34
	All yolk emulsions, including glycerine	0	0	0	
Total—pounds		38,449,483	38,166,346	32,150,283	+19
Total—case egg equivalent		1,098,556	1,090,670	918,579	
Number of firms reporting		40	40	40	

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		April		Jan. to Apr., Inc.	
		1940	1939	1940	1939
Eggs in shell	(doz.)	745,724	185,676	1,603,891	916,210
Eggs and Yolks, frozen, dried or canned	(lbs.)	14,903	Not available	67,039	Not available
Live Poultry	(lbs.)	15,751	41,104	50,766	71,964
Dressed Poultry	(lbs.)	100,589	184,506	396,641	627,293

Imports of Eggs and Poultry

Commodity		April 1940	April 1939	Jan. to Apr., Inc. 1940	Jan. to Apr., Inc. 1939
Eggs in shell	(doz.)	17,064	20,232	68,311	123,224
Whole Eggs, dried	(lbs.)	8,750	5,000	28,250	27,000
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	61,650	6,200	447,076	43,525
Yolks, frozen	(lbs.)	0	0	0	11,230
Egg Albumen, dried	(lbs.)	26,800	61,000	111,400	250,183
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	64,958	44,638	223,494	229,862
Dressed Poultry	(lbs.)	16,853	9,214	61,535	91,922
Poultry, prepared	(lbs.)	22,762	43,408	191,903	354,217

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Shavings As Nest Litter

Eggs when being sold on grade cannot be graded in the top grades when they are badly soiled or dirty. Cleanliness in eggs is important if consumer demand is to be increased.

The type of litter used in the nests is an important factor in producing clean eggs, and this fact is indicated in the accompanying tables.

SHAVINGS

	Total Eggs	Dirty Eggs	% Dirty
1 Week	127	10	7.8
2 "	124	18	14.5
3 "	128	8	6.2
4 "	117	12	10.2
5 "	105	7	6.6
5 Weeks	601	55	9.1

STRAW

	Total Eggs	Dirty Eggs	% Dirty
1 Week	115	38	33.0
2 "	128	40	31.2
3 "	110	23	20.9
4 "	117	20	17.0
5 "	87	11	12.6
5 Weeks	557	138	24.7

While the results of this test would indicate that shavings are more effective than straw is keeping down the percentage of dirty eggs found in the nests, they also illustrate the fact that regardless of the material used the percentage of eggs soiled in the nests may be high.

Along with good nesting materials one should attempt to keep the nests clean, provide one nest to each five or six birds, keep the birds from roosting in them at night, and remove broody hens from the nests at the first sign of broodiness; also keep the flock in until noon on wet days.

—H. H. Alp, Prairie Farmer, May 4, 1940.

RESULTS OF LAYING TESTS

Entering the eighth month of the present laying test year, J. A. Hanson's Leghorns at Storrs have a 120-point lead over their next nearest competitors. This top-notch pen has accumulated 2526 points from 2429 eggs in the 213 days thus far. This is 107 points more than the leader had at the same time last year.

Second best pen to May 1 is E. B. Parmenter's Red outfit at Rhode Island, which holds a 7-point advantage over Hanson's second pen at Storrs. Thomas Mettler's Reds at Hunterdon, N. J., rate fourth top position, with H. J. Hardin's Reds at Georgia holding a close fifth.

E. B. Parmenter's Red hen at Storrs replaced a hen from the same breeder at the Rhode Island Test, as leading individual to date. She has 204 eggs and 224.05 points to her credit. Hanson has top bird in White Leghorns, and George A. Pearce has the best New Hampshire. Leading bird among Barred Rocks is owned by Norman Amidon, and best White Rock is owned by Kalerok Farm

To Content Farms' pen of White Leghorns at Central New York goes the blue ribbon for outstanding performer during April. These birds averaged 27.4 eggs and 29.7 points per bird during the 30-day period.

A glance at the tables showing 20 highest pens in each of the five most popular breeds will reveal that no one breeder holds any great monopoly.

Twenty Highest Pens in All Breeds to May 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2429	2526.60	Storrs
E. B. Parmenter	Rhode Island Red	2218	2407.90	Rhode Island
J. A. Hanson	White Leghorn	2287	2400.15	Storrs
Thomas Mettler	Rhode Island Red	2286	2379.40	Hunterdon, N. J.
H. J. Hardin	Rhode Island Red	2238	2360.30	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	2306	2337.60	Passaic, N. J.
Norman W. Amidon	Barred Rock	2273	2336.75	Pennsylvania
Ralph W. Anderson	Rhode Island Red	2231	2336.10	Storrs
Eben Wood	New Hampshire	2142	2321.60	Storrs
To-Lani Farm	Rhode Island Red	2327	2312.25	Georgia
Wm. L. Gilbert Home	White Leghorn	2179	2298.30	Storrs
R. E. & F. H. Kendrick	Rhode Island Red	2138	2296.00	Rhode Island
E. B. Parmenter	Rhode Island Red	2140	2295.65	New York State
W. C. Mullins	Rhode Island Red	2156	2295.20	Texas
E. B. Parmenter	Rhode Island Red	2179	2280.25	Western New York
George M. Heberer	White Leghorn	2206	2275.75	Texas
Horseshoe Poultry Ranch	White Leghorn	2244	2275.15	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	2132	2275.10	Passaic, N. J.
J. J. Warren	Rhode Island Red	2178	2274.40	Storrs
W. C. Mullins	Rhode Island Red	2155	2262.00	Texas

High Pen in Each Standard Test to May 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2429	2526.60	Storrs
E. B. Parmenter	Rhode Island Red	2218	2407.90	Rhode Island
Thomas Mettler	Rhode Island Red	2286	2379.40	Hunterdon, N. J.
H. J. Hardin	Rhode Island Red	2238	2360.30	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	2306	2337.60	Passaic, N. J.
Norman W. Amidon	Barred Rock	2273	2336.75	Pennsylvania
E. B. Parmenter	Rhode Island Red	2140	2295.65	New York State
W. C. Mullins	Rhode Island Red	2156	2295.20	Texas
E. B. Parmenter	Rhode Island Red	2179	2280.25	Western New York
E. B. Parmenter	Rhode Island Red	2060	2175.45	Florida
J. J. Warren	Rhode Island Red	2053	2151.85	Michigan
Ford's Riverbank Farm	Rhode Island Red	2081	2144.35	Maine
Robert Chapman	Rhode Island Red	2037	2116.50	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	1964	2091.10	Missouri
Foreman Poultry Farm	White Leghorn	1901	1996.85	Central New York
Mishler-Liggett	Rhode Island Red	1924	1921.80	Arizona

High Hen in Each Standard Test for April

Owner	Breed	Eggs	Points	Test
Foreman Poultry Farm	White Leghorn	30	33.00	Central New York
Charles Lathrop	Barred Rock	30	33.00	Passaic, N. J.
Holser's Valley Farm	White Leghorn	30	33.00	Western New York
Dembro Poultry Farm	White Leghorn	30	33.00	Hunterdon, N. J.
Dryden Poultry Breeding Farm	White Leghorn	30	33.00	Texas
Iowa Master Breeders	Rhode Island Red	30	33.00	Missouri
Brummer and Frederickson	White Leghorn	30	32.95	Michigan
Joachim Breeding Farm	New Hampshire	29	32.90	Storrs
R. O. Wagemaker	Rhode Island Red	30	32.80	New York State
Plainview Poultry Farm	White Leghorn	30	32.55	Florida
J. A. Hanson	White Leghorn	30	32.50	Arizona
W. A. Seidel	White Leghorn	29	31.90	Georgia
R. C. E. Wallace	Barred Rock	29	31.90	Oklahoma
E. B. Parmenter	Rhode Island Red	29	31.85	Rhode Island
E. B. Parmenter	Rhode Island Red	29	31.75	Maine
Norman W. Amidon	Barred Rock	29	31.60	Pennsylvania

High Pen in Each Breed to May 1–(213 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2429	2526.60	Storrs
E. B. Parmenter	Rhode Island Red	2218	2407.90	Rhode Island
Norman W. Amidon	Barred Rock	2273	2336.75	Pennsylvania
Eben Wood	New Hampshire	2142	2321.60	Storrs
Harvey E. Taylor	White Wyandotte	2058	2050.45	Texas
Riley Poultry Farm	White Rock	1970	2026.00	Oklahoma
R. S. Thomas	Ancona	1849	1808.00	Pennsylvania
E. J. Covey	Black Minorca	1622	1673.90	Texas
Laclede Hatchery	Black Australorp	1669	1633.25	Oklahoma
Lindstrom Poultry Farm	Buff Minorca	1592	1507.40	Texas
T. D. Brown	White Minorca	1416	1470.30	Texas
Raymond Murphy	White Giant	1363	1439.80	Missouri
Harry Phillips	Columbian Rock	1236	1314.85	Missouri
Famous Poultry Farms	Leghorn Cross	1266	1254.50	Georgia
Iowa Master Breeders	Buff Orpington	1111	1171.85	Missouri
Charles C. Ward	Buff Leghorn	1131	1112.35	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	1264	1099.65	Florida
S. E. Raymond	Lamona	948	992.35	Storrs
R. L. Jones	Light Brahma	778	826.20	Hunterdon, N. J.
Walter Dobe	Barnevelder	582	622.15	Western New York
Daniel S. Riker	Buff Rock	320	289.25	Maine

High Hen in Each Breed to May 1—(213 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	204	224.05	Storrs
J. A. Hanson	White Leghorn	210	222.70	Storrs
George A. Pearce	New Hampshire	197	210.85	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	200	206.25	Pennsylvania
Kalerok Farm	White Rock	187	203.60	Maine
T. D. Brown	White Minorca	186	202.80	Texas
Harvey E. Taylor	White Wyandotte	182	196.30	Texas
Famous Poultry Farms	Leghorn Cross	169	171.50	Georgia
Ben G. Monroe	Ancona	168	169.65	Georgia
E. J. Covey	Black Minorca	155	168.00	Texas
O. C. French	Black Australorp	155	165.20	Arizona
Iowa Master Breeders	Buff Orpington	148	156.30	Missouri
Raymond Murphy	White Giant	153	155.35	Missouri
Harry Phillips	Columbian Rock	135	145.70	Missouri
Lindstrom Poultry Farm	Buff Minorca	140	142.00	Texas
R. L. Jones	Light Brahma	128	135.80	Hunterdon, N. J.
Charles C. Ward	Buff Leghorn	136	134.25	Oklahoma
S. E. Raymond	Lamona	128	133.90	Storrs
Cedarlaid Poultry Farm	Brown Leghorn	135	115.85	Florida
Walter Dobe	Barnevelder	84	92.35	Western New York
Daniel S. Riker	Buff Rock	79	72.15	Maine

High Hen in Each Standard Test to May 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	204	224.05	Storrs
E. B. Parmenter	Rhode Island Red	205	223.90	Rhode Island
E. B. Parmenter	Rhode Island Red	202	222.10	Passaic, N. J.
H. J. Hardin	Rhode Island Red	202	220.25	Georgia
W. A. Seidel	White Leghorn	207	217.00	Texas
Thomas Mettler	Rhode Island Red	201	213.80	Hunterdon, N. J.
Booth Farms and Hatchery	White Leghorn	198	212.60	Florida
Ford's Riverbank Farm	Rhode Island Red	198	210.05	Maine
H. Guy Loose	White Leghorn	191	209.05	Pennsylvania
J. O. Coombs and Son	White Leghorn	194	209.00	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	188	206.60	Missouri
J. A. Hanson	White Leghorn	198	204.80	Western New York
J. J. Warren	Rhode Island Red	187	203.50	New York State
Crooks Farm	Rhode Island Red	210	203.15	Michigan
Nelson Leghorn Breed. Farm	White Leghorn	189	201.20	Arizona
Holser's Valley Farm	White Leghorn	181	192.10	Central New York

High Pen in Each Standard Test for April

Owner	Breed	Eggs	Points	Test
Content Farms	White Leghorn	358	386.15	Central New York
J. A. Hanson	White Leghorn	341	370.50	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	331	359.35	Passaic, N. J.
R. O. Wagemaker	Rhode Island Red	344	358.10	Western New York
W. C. Eckard	White Leghorn	327	356.05	Michigan
George A. Pearce	White Leghorn	329	353.85	Hunterdon, N. J.
Missouri Valley Hatchery	Rhode Island Red	329	352.75	Missouri
Lone Oak Leghorn Farm	White Leghorn	331	352.15	Florida
Robert Chapman	Rhode Island Red	323	345.70	Oklahoma
I. Commer	White Leghorn	331	344.80	Texas
Norman W. Amidon	Barred Rock	321	343.35	Pennsylvania
Ford's Riverbank Farm	Rhode Island Red	323	341.60	Maine
Miami Chick Hatchery	White Leghorn	316	340.75	New York State
Glendale Poultry Farm	Rhode Island Red	311	338.85	Rhode Island
To-Lani Farm	Rhode Island Red	323	338.00	Georgia
P. S. Dickey	White Leghorn	323	326.45	Arizona

20 Highest White Leghorn Pens in Country to May 1

Owner	Eggs	Points	Test
J. A. Hanson	2429	2526.60	Storrs
J. A. Hanson	2287	2400.15	Storrs
Wm. L. Gilbert Home	2179	2298.30	Storrs
George M. Heberer	2206	2275.75	Texas
Horseshoe Poultry Ranch	2244	2275.15	Texas
George M. Heberer	2147	2260.05	Texas
Erath Egg Farm	2135	2251.10	Texas
Guy A. Leader	2161	2246.70	Storrs
W. E. Pyles and Son	2080	2222.10	Georgia
C. O. Davis	2104	2221.55	Texas
George A. Pearce	2120	2210.90	Hunterdon, N. J.
Erath Egg Farm	2155	2209.50	Texas
Foreman Poultry Farm	2168	2202.90	Texas
Sand Springs Home Farm	2213	2202.55	Texas
Alfred Macmillan	2064	2200.60	Texas
W. E. Pyles and Son	2088	2193.85	Georgia
Kauder's Pedigreed Leghorns	2071	2182.65	Storrs
Sand Springs Home Farm	2099	2181.80	Texas
Piho Brothers	2090	2181.10	Storrs
A. E. Guinn	2179	2177.70	Georgia

20 Highest Rhode Island Red Pens in Country to May 1

Owner	Eggs	Points	Test
E. B. Parmenter	2218	2407.90	Rhode Island
Thomas Mettler	2286	2379.40	Hunterdon, N. J.
H. J. Hardin	2238	2360.30	Georgia
Alampi Poultry Breeding Farm	2306	2337.60	Passaic, N. J.
Ralph W. Anderson	2231	2336.10	Storrs
To-Lani Farm	2327	2312.25	Georgia
R. E. & F. H. Kendrick	2138	2296.00	Rhode Island
E. B. Parmenter	2140	2295.65	New York State
W. C. Mullins	2156	2295.20	Texas
E. B. Parmenter	2179	2280.25	Western New York
Alampi Poultry Breeding Farm	2132	2275.10	Passaic, N. J.
J. J. Warren	2178	2274.40	Storrs
W. C. Mullins	2155	2262.00	Texas
W. H. Wilson	2304	2245.05	Georgia
E. B. Parmenter	2118	2242.90	Storrs
Thomas Mettler	2136	2222.90	Passaic, N. J.
J. J. Warren	2094	2209.80	Texas
Walter H. Rogler	2089	2196.75	Storrs
Crooks Farm	2070	2182.50	Storrs
J. J. Warren	2078	2182.35	New York State

20 Highest New Hampshire Pens in Country to May 1

Owner	Eggs	Points	Test
Eben Wood	2142	2321.60	Storrs
Thomas Mettler	2191	2223.35	Pennsylvania
George A. Pearce	2164	2174.25	Passaic, N. J.
Joachim Breeding Farm	2029	2127.65	Pennsylvania
Wene Chick Farms	1942	2077.60	Storrs
Lamar W. Sexton	1999	2061.35	Hunterdon, N. J.
Kauder's Pedigreed Hampshires	1915	2055.85	Georgia
James H. Horne	1932	2052.10	Storrs
Joachim Breeding Farm	1865	2020.25	Storrs
Pine Top Poultry Farm	1865	2018.75	Storrs
Eben Wood	1866	2008.25	Rhode Island
Hubbard Farms	1997	2006.50	Pennsylvania
Floyd H. Moore	1948	1997.80	Pennsylvania
Ned C. Willoughby	1975	1983.45	Georgia
Pine Mt. Valley Farms	1924	1978.35	Georgia
Broad Acres Farm	1956	1976.90	Storrs
Thomas J. Harrold	1946	1969.10	Georgia
A. J. Williams	1839	1954.35	Florida
Fuzzydele Farms	1829	1948.20	Pennsylvania
A. J. Williams	1840	1935.55	Florida

20 Highest Barred Plymouth Rock Pens in Country to May 1

Owner	Eggs	Points	Test
Norman W. Amidon	2273	2336.75	Pennsylvania
R. C. Cobb	2156	2213.15	Storrs
J. W. Schaible	2146	2129.65	Hunterdon, N. J.
Dryden Poultry Breeding Farm	2085	2068.30	Storrs
P. N. Hibbard	2039	2044.40	Storrs
Riley Poultry Farm	2051	2005.55	Texas
Broad Acres Farm	1979	1953.95	Storrs
Fuzzydele Farms	1937	1948.15	Storrs
R. C. E. Wallace	1908	1914.60	Florida
Stuart W. Smith	1888	1903.15	Storrs
Riley Poultry Farm	1845	1896.20	Michigan
E. B. Parmenter	1805	1888.85	Georgia
Dryden Poultry Breeding Farm	1900	1864.85	Pennsylvania
Booth Farms and Hatchery	1791	1859.05	Oklahoma
Riley Poultry Farm	1819	1854.25	Oklahoma
Booth Farms and Hatchery	1767	1834.15	Florida
Riley Poultry Farm	1804	1821.55	Georgia
R. R. Parks	1834	1820.80	Pennsylvania
R. R. Parks	1783	1815.70	Maine
E. B. Parmenter	1743	1802.35	Pennsylvania

20 Highest White Plymouth Rock Pens in Country to May 1

Owner	Eggs	Points	Test
Riley Poultry Farm	1970	2026.00	Oklahoma
Townsley Trapnest Farm	1931	1986.30	Georgia
John Spangenberg	1911	1954.00	Storrs
E. A. Hirt	1874	1952.85	Storrs
John Spangenberg	1892	1945.55	Maine
Homestead Farm	2062	1917.35	Pennsylvania
Booth Farms and Hatchery	1897	1894.10	Texas
Booth Farms and Hatchery	1789	1884.65	Missouri
Riley Poultry Farm	1914	1871.15	Storrs
Kalerok Farm	1734	1855.90	Rhode Island
Riley Poultry Farm	1970	1851.75	Georgia
Drumm Egg Farm	1792	1834.00	Georgia
E. A. Hirt	1715	1805.85	Rhode Island
Kalerok Farm	1691	1782.50	Maine
Kalerok Farm	1687	1768.70	Pennsylvania
F. L. Woodworth	1677	1762.40	Michigan
Belcarihill Farms	1746	1729.20	Pennsylvania
Clyde Cochran	1705	1711.50	Oklahoma
A. H. Ward	1680	1687.35	Oklahoma
Booth Farms and Hatchery	1643	1675.30	Oklahoma

Average Production in Each Test to May 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. Per Doz. in Ounces	Per Cent Mortality for Apr.	Per-Cent Mortality to May 1
Storrs	1,300	135.66	139.60	24.69	1.84	7.07
Pennsylvania	1,066	133.37	135.19	24.31	2.34	11.06
Georgia	1,352	132.75	134.28	24.26	1.77	12.94
Texas	1,456	131.98	134.12	24.38	1.51	11.26
Oklahoma	650	127.32	130.23	24.52	2.00	10.00
Passaic, N. J.	1,144	126.63	129.83	24.60	2.27	8.91
Hunterdon, N. J.	650	124.45	127.89	24.64	2.15	8.76
Florida	1,248	122.83	125.15	24.43	1.60	10.25
Michigan	741	121.34	124.17	24.55	1.48	10.79
Arizona	390	120.18	119.78	23.90	2.05	12.05
Rhode Island	650	112.75	118.06	25.12	2.15	13.38
New York State	1,092	112.51	114.47	24.40	.73	6.31
Maine	1,027	112.12	112.74	24.12	2.23	11.39
Missouri	780	102.49	108.42	25.36	2.68	12.17
Central New York	910	103.51	106.93	24.79	1.97	6.70
Western New York	884	103.65	106.58	24.67	.79	7.35
All Tests	15,340	121.63	124.33	24.52	1.82	9.92

High Pen, Each Breed, in Illinois Non-Standard Test to May 1

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	1338	1294.35
E. T. Hirstein	White Leghorn	1261	1278.95
Belldear Hatchery	White Wyandotte	1152	1180.55
Berry-Ajax Hatchery	Black Australorp	1117	1143.20
John Pfeifer	New Hampshire	1044	1137.45
F. S. Tarbill	Rhode Island Red	1085	1095.15
Illinois Hatchery	White Rock	1008	1032.60
Wallace Moody	Buff Rock	765	778.85

5 High Pens, R.O.P. Progeny Test, Paterson, N. J., to May 1

Owner	Breed	Eggs	Points
E. B. Parmenter	Rhode Island Red	2415	2458
J. J. Warren	Rhode Island Red	2357	2383
Crooks Farm	Rhode Island Red	2315	2381
W. B. Coles	White Leghorn	2250	2254
E. R. Rutter	White Rock	2169	2170

High Pen, Each Breed, in Vineland, N. J., Hen Test to May 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	1375	1495	Two-Year
E. B. Parmenter	Rhode Island Red	1259	1366	Two-Year
Hockhockson Farm	Barred Rock	1120	1201	Two-Year
Albert Lawton	White Rock	920	1000	Two-Year
Pine Top Poultry Farm	New Hampshire	634	694	Two-Year
Sebold Poultry Farm	White Leghorn	952	1012	Three-Year
J. J. Warren	Rhode Island Red	745	812	Three-Year
Nedlar Farm	New Hampshire	631	681	Three-Year
Schwegler's Hatchery	White Wyandotte	1026	1109	Mixed-Age
Treiber Poultry Farm	White Leghorn	1000	1081	Mixed-Age
Kerr Chickeries	Barred Rock	977	1054	Mixed-Age
Quimby School	White Rock	933	1009	Mixed-Age
Kerr Chickeries	Rhode Island Red	892	967	Mixed-Age
Wene Chick Farms	New Hampshire	829	889	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5164	5585	Two-Year
E. B. Parmenter	Rhode Island Red		5222	Two-Year
Schwegler's Hatchery	Barred Rock	4375	4584	Two-Year
Albert Lawton	White Rock	3913	4159	Two-Year
Pine Top Poultry Farm	New Hampshire	3411	3685	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	6900	7109	Three-Year
J. J. Warren	Rhode Island Red	6651	7169	Three-Year
Nedlar Farm	New Hampshire	5289	5788	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to May 1

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	1506	1626.90	Two-Year
E. B. Parmenter	Barred Rock	1405	1542.00	Two-Year
J. J. Warren	Rhode Island Red	1228	1339.35	Two-Year
Fuzzydele Farms	New Hampshire	1211	1329.00	Two-Year
Lindstrom Poultry Farm	White Wyandotte	1096	1198.90	Two-Year
Fuzzydele Farms	White Leghorn	1246	1364.90	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	5063	5260.20	Two-Year
E. B. Parmenter	Rhode Island Red	4748	5072.55	Two-Year
E. B. Parmenter	Barred Rock	4716	5065.15	Two-Year
Fuzzydele Farms	New Hampshire	4466	4807.25	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4186	4480.55	Two-Year

Rubber Fingers Pick Chickens

Did you ever see rubber fingers pick the feathers off chickens? The rubber fingers on a new poultry picking machine move swiftly, and therefore dress a chicken faster than the most expert hand pickers can do the job.

This latest invention to help poultry raisers, already in use for about a year, does the seemingly impossible job of stripping the feathers, without tearing the skin. It does an unusual job on barebacks.

The working part of the machine is a revolving drum on which are mounted several hundred rubber fingers. These rubber fingers look very much like 4-inch lengths of garden hose, except that the rubber is of softer consistency and the outside surface of each finger has threadlike grooves on it. An electric motor turns the drum at a high rate of speed, rotating it away from the man who does the dressing.

A chicken is first scalded, using either the slack scald at 130 degrees or the hard scald at 190 degrees. However, the rubber fingers are somewhat softer for the hard scald method; therefore, if both types of scalding are used, two machines have to be obtained.

After scalding, the first step in dressing is to remove the large tail and wing feathers by hand, although some operators are learning to remove these feathers on the machine. Then the bird is grasped firmly and held against the revolving fingers, changing the position until all the feathers have been removed.

The machine will pick broilers, roasters, hens, or any other poultry including turkeys, with equal efficiency. It is not as yet perfect for picking ducks, because of the oil in the feathers, but progress is being made with a scalding solution that will eliminate this trouble.

—American Poultry Journal, June, 1940.

✍✍ BIRDS have one physical advantage over human beings because a nervous reaction closes a bird's throat when it has had enough to eat but a human throat continues to receive food long after the mouth should have been closed.

—News Release from Ohio State University.

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NATIONAL POULTRY DIGEST

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JULY 15, 1940

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Vol. 2, No. 19 July 15, 1940

SEP 11 '41

Moisture for Eggs Most Important

By CARL DOSSIN
Pennsylvania State College

Condensed from Poultry Item

MORE and more poultrymen are giving serious consideration to either improving or building new egg rooms. It has been shown that low temperature and high humidity in the egg room are essential for maintaining quality. These conditions are not satisfactory for the persons cleaning and packing the eggs. For this reason it is desirable to have a two-room egg cellar. One room for cooling and holding the eggs and the other one for doing the cleaning, grading and packing.

Often a small section of the house cellar can be partitioned off with insulating board for the holding room. This room need be no larger than is necessary for holding a couple of days' supply of empty cases, one week's supply of packed cases, and room for the baskets of eggs brought in from the hen house. If possible, use a corner of the cellar for this room so as to have two stone or concrete walls. If a new egg cellar is to be built, try to build it into a bank so that it will not be necessary to carry the eggs up and down stairs.

Temperature and Humidity

Information gathered during the fall and early winter months from poultrymen consigning eggs to

The Item Publishing Company, Inc., Sellersville, Pa.
(Poultry Item, June-July, 1940)

Pennsylvania auctions brings out the importance of maintaining high humidity and low temperature in the egg room. Auction members' egg cellars were studied because their eggs are sold on state grades. The figures used on "per cent fancy" were for a few sales prior to the time of the visit, for it was felt that conditions in the egg cellars would be about the same as when the temperature and humidity readings were taken. It must be appreciated when reviewing the figures presented that only 100 eggs in each case are inspected and a tolerance of 10 per cent of eggs in the next lower grade is permitted.

The farms were first divided into two groups, ignoring everything but per cent moisture or relative humidity. One group had less than 75 and the other over 75 per cent humidity as determined by a sling psychrometer.

% Relative Humidity	% Fancy	No. Farms
Under 75	39.4	31
Over 75	95.6	15

The same farms were then regrouped according to temperature, ignoring everything else. The one group had a temperature less than 65 degrees and the other over 65 degrees Fahrenheit.

Temperature	% Fancy	No. Farms
Under 65	61	30
Over 65	51.5	16

The farms then were re-grouped according to low temperature and high humidity, high temperature and high humidity, low temperature and low humidity, and high temperature and low humidity.

No. Farms	Temp.	% Humidity	% Fancy
9	Under 65	Over 75	97.7
6	Over 65	Over 75	92.5
21	Under 65	Under 75	45.1
10	Over 65	Under 75	27

From the number of cellars studied, it is apparent that a high percentage of fancies as determined by candling can be made if the poultrymen will follow the usually recommended practices and hold the eggs in a cellar with low temperature and high humidity. It was necessary in practically all instances to supply additional moisture to raise the humidity sufficient for maintaining fine quality.

How to Supply Moisture

The common method of supplying moisture is by wetting the floor two or three times a day. Another practice is to fasten a pipe along the wall near the ceiling. Many small holes are drilled into the pipe permitting water to drip down the wall. The flow of water can be regulated so that the entire wall can be kept wet at all times and still not waste the water.

The most satisfactory method of supplying moisture is by means of a humidifier set up in the egg cellar. When they are used, one will have more satisfactory working conditions, for the floor can be kept dry.

Preventing Molds

There is always danger from molds when high humidity is maintained. To reduce this danger to a minimum, have a small house-fan circulating air in the egg room. One should also plan some kind of a fresh air intake to help eliminate this problem.

Only one to two day's supply of empty cases should be held in the egg room prior to the time they are used. If left in the egg room with high humidity for any length of time, molds may develop in the cases. Also, always keep all cases on racks off the floor. If possible send the eggs to market at least twice a week.

Preventing Turkey Stampedes

The causes for stampedes of turkeys at night are many; perhaps a stray cat, a weasel, a dog, a curlew. Turkeys are about as flighty as a herd of cattle; like the cattle, the more they stampede, the less it takes to send them flying through the night.

Lights seem to be about the only thing that will hold stampedes in check. Where a roosting corral is available and lights are handy, it is a quite simple matter to hold down stampedes by keeping a couple of lights burning at night, right from the time the birds are first put on range. A grower following this practice claims he has not had a single stampede for two years.

Not everywhere are electric lights available and in their place, ordinary road lights, these small round pots that construction men burn at night to warn motorists of danger, make a satisfactory substitute. About four of these road flares, put on opposite sides of the flock after they have bedded down, work satisfactorily. Lanterns are also quite widely used and are satisfactory. These night lights serve the double purpose of warning off vermin and stopping these night stampedes. The cost is negligible in comparison to the savings in bruised and injured turkeys.

—Norbest Turkey News, June, 1940.

☞ CLEAN eggs are partly a result of changes in laying quarters on the William Dillon Ranch of the Liberty District, California. Nests were removed from normal placings along the walls and a laying room was built in each end of the large houses. To enter these, chickens were compelled to walk over wire platforms and inside through deep rice-hull litter in an effort to clean the feet well. Deep nest, with a large amount of rice-hulls for the eggs to become buried in, helped to prevent dirty shells also.

—Pacific Rural Press.

Battery Brooding Troubles

By ROY E. ROBERTS
Purdue University

Condensed from 1940 Indiana Poultry Blue Book

ONE problem where chicks are kept in batteries is slipped tendons, a condition in which the tendon on the back of the leg slips out of place at the hock joint. One cause of slipped tendons is an oversupply of minerals. This trouble is more likely to occur on wire floors than on solid floors. Therefore, a ration which causes no trouble with chicks brooded on solid floors on litter may produce slipped tendons on wire floors.

It had been known for some time that wheat bran and wheat middlings helped to prevent slipped tendons. This preventive effect was apparently due to the manganese present in bran and middlings. The usual practice is to add manganese sulphate at the rate of one-fourth pound per ton of feed. In order to get this small amount well distributed in the ration it should be mixed thoroughly with the salt before the salt is added to the ration. Even when manganese sulphate is added, the mineral content of the ration should not be increased more than is necessary to prevent rickets since an excessive amount of minerals may cause slipped tendons even though

Another serious problem with chicks kept in batteries on wire floors is the development of blisters on the breasts. Chicks with blisters sell at a discount.

It has been our experience that where chicks are kept on wire floors longer than seven or eight weeks, a number of them will have breast blisters. The percentage of chicks which develop blisters varies considerably, but has run as high as 50 per cent in some lots kept on wire floors for as long as 12 weeks. More blisters have occurred and have developed earlier in chicks which have grown rapidly.

These blisters are apparently caused by irritation from the wire floors. The percentage of blisters has been greater among chicks kept on fine wire which was roughly woven than among those kept on heavier wire which was smoothly woven. It has not been possible, however, to prevent these blisters by the use of the heavier and smoother wire, or even by the use of a floor made of 1 by 2-inch wooden slats.

The only satisfactory way which we have found to prevent the loss due to breast blisters is to transfer the chicks at about eight weeks of age to solid floors with litter, where they are kept until ready for market.

One recommendation for the prevention of blisters is to raise the feed troughs as the birds become larger. While this practice may be of some help, it seems doubtful that it will prevent the trouble since the birds will rest on the wire floors when they are not eating, regardless of the height of the feed troughs.

In a trial in which the dropping pans, covered with litter, were placed on top of the wire floors in the bottom decks of some batteries, the chicks on the litter did not develop breast blisters, while a number of chicks in the same batteries on the wire floors developed bad blisters. It has also been suggested that placing roosts in the battery compartments will help to prevent blisters. In one trial in which this was tried, the percentage of blisters was reduced, but a number of chicks developed crooked breast bones. Whether the crooked breasts can be prevented by adding more vitamin D to the ration has not been determined. Another objection to the use of roosts is that they make it more difficult to keep the pens clean.

Torn Backs

Another suggestion for the prevention of blisters is that sufficient head room be provided so that the chicks can stand up without difficulty so there will be less tendency for them to rest on the wire floors. There is a limit to the height of the decks, however, since where too much head room is allowed there is more tendency for the birds to climb over one another when they are frightened. This results in a number of torn backs. It seems that some groups of chicks are more easily frightened than others and in some cases we have had considerable trouble with torn backs.

Bare-Backs

Broiler chicks must be well feathered, since "bare-backs" sell at a discount. The ability to grow feathers rapidly is inherited. Chicks should be obtained from a strain which has been selected for rapid feather development. The rate of feathering is also influenced by the feed. Feather growth is retarded if the ration does not contain sufficient protein of the right kind. Since a ration must be relatively high in good quality protein to produce rapid growth, if chicks grow rapidly it is not likely that poor feathering is due to the ration.

On the same ration and with chicks of similar breeding, there has been more trouble with bare-backs where chicks have been kept in batteries than where they were in brooder houses. In a number of the battery chicks, the feathers have been broken off, either by picking or by the chicks climbing over one another.

In some cases the habit of feather picking may develop into cannibalism. Cannibalism is more likely to occur among chicks with white feathers since the blood in the quills is more easily seen and attracts other chicks. Chicks are apparently more likely to start picking if the brooder room has too much light. A common recommendation is that the brooder room be kept rather dark with lights placed so that they will shine on the feed troughs with as little light as possible in the interior of the decks.

Metal Equipment Better

An inventor who deserves praise is the man who originated metal equipment. When I started in the poultry business many years ago, metal equipment was in its infancy and expensive. I think I even took a delight in making my own equipment with my own hands — nests, roosts, hoppers, water stands, etc.—and since wood was the only material I felt able to work with, most of my early equipment was wooden. Gradually, as replacement has been necessary, I have been substituting metal for wood in every possible case. Result: everything less cumbersome, more durable, and infinitely easier when it comes to cleaning and service.

The man who can start off with up-to-date metal equipment throughout his poultry plant is in an enviable and advantageous position. I don't mean the toy playthings that you see in some of the stores—little bits of chick hoppers and water founts that would crowd a score of chicks to eat and drink at one time and that would litter the entire floor of a brooder house if enough were provided for an ordinary stoveful of chicks—but the man-sized hoppers and waterers that will not only hold the feed and water, but allow the chicks room to consume it, and that cut the time of attending the young stock to a fraction.

In my opinion, any hopper for even the smallest chicks that is less than 3 or 4 feet in length is a snare and a delusion, and as for those affairs with a dozen punched holes on either side—well, they are simply a joke as any one who has been around a flock of chickens knows well enough.

There is really nothing that reduces the time and effort of caring for a bunch of chicks like well-designed, sturdy metal feeding equipment, and most of the manufacturers are today putting out really serviceable products in these lines.

—E. H. Reeman, New Jersey Farm and Garden, June, 1940.

Poultry House Cooling

By J. T. TAVERNETTI

University of California

Condensed from Pacific Rural Press

TO determine the feasibility and value of cooling poultry houses, experiments were conducted at the University of California at Davis during 1938 and 1939. Regular University type poultry houses 16 by 18 feet were equipped with evaporator type coolers capable of giving one air change in the house per minute.

The coolers consisted of a 3-inch excelsior pad about 3½ feet square and a 19-inch fan driven by a ⅛ horsepower motor (200 watts). They were located in the front of the house about 3 feet above the floor and were turned on and off by a thermostat located under the front of the droppings board. The thermostat was set to turn the cooler on when the temperature went above 85 degrees Fahrenheit and off below 80 degrees Fahrenheit. No attempt was made to insulate the houses other than closing the curtains and windows when the cooler was in operation.

In the 1938 trials one cooled house and one check house were used. Ninety White Leghorn pullets were placed in each of the two houses on April 1, 1938 and kept there until January 5, 1939. The birds had been hatched in September 1937 and started to lay in February 1938. The cooling equipment was in operation from May 4 to October 4.

The average egg production for the entire period was approximately the same in the two houses but the distribution of the egg production was markedly influenced by the cooling. Up to the end of June the production in the two houses was approximately the same. During July, August and September the production in the cooled house was higher than in the check, but this was reversed during October, November and December with the result that the average for the entire period was about the same.

The mortality in the cooled house was lower than in the check. During hot weather the hens in the cooled house were noticeably more comfortable than in the check house. The weight of hens and eggs and the food consumption were about the same for both.

No trouble was experienced in maintaining a temperature of less than 90 degrees Fahrenheit in the

Pacific Rural Press Co., 83 Stevenson St., San Francisco, Calif.
(Pacific Rural Press, June 15, 1940)

cooled house even on days when the outside temperature was as high as 110 degrees Fahrenheit. The electrical energy consumption for the entire year was 75 kilowatt hours.

Aluminum Paint on Poultry Farms

Every once in a while, I find myself lifting my soul in humble and hearty thanks to the inventor of aluminum paint. I don't know what uses aluminum paint may have in other fields, but around a poultry plant it seems to me an indispensable product. As a priming coat on either wood or metal, even where one does not wish the finish coat to shine like gleaming silver, it has few equals. Its adhesive qualities are remarkable, and as for coverage—well, it seems able to cover anything.

I have just been setting up some summer shelters, and those low-spreading roofs were a shabby sight until I got out the paint brush and began slapping on the aluminum. Now they are as shining as a silver dollar and are ready to withstand whatever storms the summer may bring as well as the heavy rains of fall that will drench them before they are packed away once more for winter.

I have no quarrel with other types of good paint, but for a quick, efficient job, aluminum is a joy and delight. You can literally "slap it on" and it always seems to come out smooth and even without a brush mark to brand your amateur labor.

Its uses, too, are manifold and it can take almost any kind of weather punishment. I use it on steel gates and fence posts, on metal water stands, even on feed hoppers if they begin to show signs of rust. It makes the cast iron rings of brooder hovers look like new. It touches up hinges and keeps them from developing rust, retarding it even when it has got a start. It will rejuvenate almost any piece of farm machinery and its cost in the terms of its coverage is trifling. It is hard for a busy poultryman to keep ahead of his painting schedule at all times, but there is no place where paint plays a more important part than in the upkeep of poultry buildings and equipment.

—E. H. Reeman, New Jersey Farm and Garden, June, 1940.

◀◀ TO KEEP foxes away from his ducks, Sir George Anderson, of Spyways, Hartfield, Sussex, England, put a hurricane lamp near his duckpond—and as a result has been fined 10 shillings for exhibiting a light in his grounds.

—Eggs, London, England, Jan. 24, 1940.

Cobble Stone Yards for Turkeys

By ASHLEY BERRIDGE
Michigan State College

Condensed from Turkey World

CLOSE confinement of turkeys has aroused the interest and study of many turkey growers, particularly those raising less than 1,000 birds. Methods of housing are being developed to meet local conditions. The use of the brooder house and porch, the battery brooder, the revamped barn or outbuilding, wire floors and even complete wire structures have resulted from the desire of certain growers to rear a few turkeys where they could be watched.

As far as is known to the writer, the original "stone yard" for the turkeys was built at Lake City Experiment Station, a substation of Michigan State College. Its purpose was to keep extra turkeys not needed on feeding tests, where they could be watched.

From 400 to 500 purebred Bronze turkeys are grown each year. Up to 1933, these birds were reared under semi-confinement range conditions. In order that accurate experimental feed tests could be made, a rearing house 100 feet long and 25 feet wide was built and occupied that year. It contained 10 pens, each 10 feet wide and 25 feet long, capacity 30 turkeys each. In providing turkeys for these pens, eggs were usually incubated from several groups of hens.

The poults left over were bunched together, and they made up a management demonstration flock. That these turkeys might be changed over from semi to close confinement, the first stone yard was built in 1936. Its dimensions were 70 by 80 feet, and at present provides space for 100 turkeys each year. A second yard, 60 by 70 feet, was built the following year. A third similar yard will be completed this season. Each will provide space for 100 turkeys.

Reasons for Confinement

There were several reasons for this change to close confinement. The important ones were from a management standpoint.

First: To have the turkey project become definitely located. It is now convenient to the other farm buildings, and especially to the feed and water supply. This has improved working conditions, lowered labor costs and reduced the opportunity for loss from accident, prowling animals and thieves.

Second: To improve opportunities

From the article, "Mich. Station Develops Stone Yard System" (Turkey World, June, 1940) for sanitation. Small yards and buildings can be kept clean. Visitors, animals and other spreaders of disease can be kept out. Mixing of turkeys with other poultry can be prevented. Attendants can more easily keep disease out of the flock by changing or disinfecting footwear.

Third: To improve quality. The opportunity for close observation can improve feeding. The daily contact of the caretaker with the birds in small quarters, the absence of excitement, and generous feeding trend for more rapid growth and better finishing. Selections for local trade of properly finished turkeys can be made more easily.

Building the Yard

To the farmer with other poultry besides turkeys, to the grower with a small farm, and to the near-city dweller with high priced land, the stone yard can be recommended as an inexpensive means for close confinement.

The building of the yard is not difficult, yet it should be rather carefully planned, since it cannot be changed readily.

The location is important. Many trips must be made to this yard. It should be rather near the house as the housewife often has the responsibility of the small turkey flock. Consider availability of water, feed, lights and protection from high winds.

Light Soil Preferred

The soil is important. Preferably it should be sand or a soil of porous nature. Good drainage is necessary, and when built on clay, the yard should slope to provide drainage. The layer of stones must be deeper on water-holding soils. The secret of a successful stone yard is that each rain will carry away droppings and cleanse the stones. There must never be standing puddles of water in the yard.

The fence should be durable and high enough to keep the turkeys in and intruders out. A fence of woven wire 6 feet high with either steel or strong wood posts is satisfactory. It is advisable to clip the feathers on one wing of each hen. Heavy toms do not attempt to fly out.

The roosts should be constructed to provide protection from the sun and storm as well as a comfortable place for the night. An inexpensive roof of wood, steel, asphalt roofing, canvas or even brush will meet the requirements. Since the stones get hot on a bright summer day, the shelter is often appreciated by the turkeys. The cold winds and rains of autumn can be tempered by burlap sacks tacked on two sides of the shelter.

A simple bleacher-shaped roost, 10 feet square and with the top pole 6 feet from the ground, is recommended. The cedar poles are 11 feet long and 4 inches in diameter. A sloping steel roof is 8 feet from the

ground in front and 7 feet at the rear. Such a roost costs little to build and is long lived. It must be screened in under the pole roosts and around the lower part so that the turkeys can never come in contact with the droppings.

Size of Stones Used

The stones are put in the yard last. Coarse cobble stones, the smallest 2 inches in diameter, are preferable. Field stones from 6 to 8 inches in diameter are satisfactory. In gravel grading, for road building, many over-sized stones can be had for the hauling. While crushed rock could be used, the rounded stones are much better. In the four years at Lake City the turkeys have not developed sore feet on cobble stones.

The first layer of stones should be spread evenly and not less than 4 to 5 inches deep. Each spring, the stones should be dragged with a spring tooth drag and fresh stones added to any shallow place. A yard or so of fine gravel can be dumped in one corner for dusting and grit. It should be raked clean frequently.

The turkeys reared on the stone yards, at the Lake City Station, have been free of disease and mature as high quality meat birds. The poults are placed in the yards at 8 to 10 weeks of age and removed when mature.

The yards have now been used for four years, the rain and sunshine having kept them clean and sanitary. The stone yard is another method of raising turkeys which many growers will find interesting and profitable, with a reduction of labor and disease.

Moldy Eggs

During the warm, humid weather of the past few weeks, we have had some eggs come into the auction which were moldy. Others have had a musty smell which buyers object to very much. Watch your egg room and see that it has a sweet, fresh odor. It may be necessary to ventilate it more. Windows should be opened at night when the temperature is low. The egg room should be given a good cleaning which will do much to prevent the growth of mold and objectionable odors.

The empty cases should be kept at least 6 inches off the floor so there is no possibility of the cases, flats or fillers becoming wet. Eggs which have been cased should receive the same treatment. Eggs should always be kept in a cool, moist room, but care must be taken to prevent mold and must during the summer.

—Health Ray News. Poultry Producers Association, Versailles, Ohio.

Cape Cod's Chicken Pie Man

By G. T. KLEIN

Condensed from Everybodys Poultry Magazine

IT was during the height of the depression that "Pop" O'Brien of Cape Cod found himself absolutely up against it in making a living from a flock of poultry. A R. I. Red hen would bring about 75 cents, but there was no enthusiasm about buying them even at that figure. There were plenty of vacationists on Cape Cod, and "Pop" knew how they disliked cooking. It gave him an idea.

One bright and sunny Saturday morning, residents of Dennisport, Massachusetts, saw this genial old Irishman wheeling something to town on a wheelbarrow. In front of a vacant building he stopped and started writing on the window with a small paint brush and some whiting. Here and there he placed a letter, but always so disconnected that no one knew what his message was until it was complete. "Homemade Chicken Pies Like Mother Used To Make" Pop wrote. He did the job very leisurely, and by the time he was through, 100 curious people were standing about to see what was going on.

The Start of a Business

In just 10 minutes from the time he started, the 21 pies that Mrs. O'Brien baked were sold at 40 cents each. "When will you be back with more?" they asked. The following Saturday, 100 pies were sold from the same place and 200 a week for the remainder of the summer and with the record of never carrying one home.

Ten thousand is the count now and "Pop's Chicken Pies" are known the country over, for on the streets of Dennisport, or any other Cape Cod town, one can see license plates from nearly every state in the U. S. during vacation time. This is not a bad record for a man who will be 80 years young this year.

Last summer Pop sold $2,500 worth of pies in 10 weeks. But that's not all, for he sold 1500 blueberry pies, hundreds of chicken sandwiches and coffee and doughnuts.

Mrs. O'Brien did not continue to make the pies very long. As quickly as "Pop" learned the secrets of cooking and particularly the making of the pie crust, he relieved Mrs. O'Brien of the job. For six years he has made every pie that has been sold. When vacationists come to the Cape, Pop is on hand with a portable kitchen and "Pop's Pie Plant."

Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.
(Everybodys Poultry Magazine, June-July, 1940)

Secrets in Pie Making

The secrets of the business Mr. O'Brien says are in getting the correct seasoning of the poultry and in the pie crust. But of his methods he makes no secret. He has given many of his recipes to poultrymen and has even had men and women come to his kitchen and work with him until they learned how. Others have succeeded reasonably well in selling pies. One woman bought chickens from her husband at market price and made enough money off the pies during a summer to take a trip to Burmuda the following winter.

As I sat in his temporary winter kitchen at the poultry farm and sampled half of one of the pies, he gave me the recipes for the seasoning and the pie crust. The best chicken for pie is a hen that weighs about 7 pounds. Such a bird will make 8 to 10 of the small size.

Pop's Recipe for Chicken

The dressed chicken is cut up as for stewing and made ready for cooking in a kettle. First, two onions for each chicken are cut up finely and placed in the bottom of the kettle. Other seasoning consists of salt, pepper, celery salt and Bell's poultry seasoning. Then he adds the chicken and last the water to cover it. The chicken is cooked for 2 to 7 hours depending entirely upon the age of the bird. It should come off the bones easily, but should not be cooked too much.

The recipe for the pie dough is—

1 cup lard or equal parts lard and chicken grease
6 cups flour
2 heaping teaspoonful Rumford's baking powder
1 cup water

The shortening is cut very fine with a wire shortening cutter and worked evenly into the mixture. The dough is handled just as little as possible.

The technique that this old gent used in rolling out the pie crust and preparing the pie for the oven might easily turn any housewife green with envy. The fingers that have gone through the procedure so many times, neatly placed the rich soft crust in the pan and then dropped pan and crust on the table. Almost like magic the dough neatly settled in the pan and with lightning speed the edge was trimmed.

Topped With An Egg Mixture

Into the pie first went the chicken previously cooked and seasoned, and it was filled with the rich yellow delicious gravy. Then came more pie crust neatly placed and trimmed. The last step was to paint the crust with a pastry brush dipped into an egg yellow mixture that aroused my curiosity.

A trick learned while working near a distillery, said Pop. The burnt sugar that colors expensive whisky can be used to brown the top of a chicken pie. One egg and 2 teaspoons of sugar is the recipe for this mixture. This little secret made me wonder about the yellow color of the gravy. In typical Irish fashion he smiled and pointed to a bottle of yellow vegetable coloring on the shelf.

Into a small oven on an oil stove the pie went. The temperature registered more than 500, but it was only 10 minutes before Pop was preparing to serve me half of the most delicious pie I ever ate. The other half was there if I wanted it, but half of this very rich pie was enough for me and enough for most people, I am informed.

Pies Sold at 40 Cents and $1.10

The pies are made in two sizes. The 6-inch pie sells for 40 cents and 9-inch pie for $1.10. The small pie is sold on a paper plate, but the large one on the plate that it is baked in. There is a 10-cent refund if the plate is returned. Each pie is carefully marked into servings before it is baked, so that all will have an equal portion when served. This is done with a cardboard circle which has been carefully marked off and is placed on the uncooked pie and marked with a knife. The small pie serves two and the large one five.

Has Egg Route in Winter

Born in Canada, Mr. O'Brien has had a varied experience. He has been in the manufacturing business and on the road as a salesman. But most important of all, he is a poultryman. His sales program is excellent. Throughout the winter, the flock produces eggs for a retail route on Cape Cod. In the summer these layers are sold by way of the pot and a new crop of pullets goes into the laying house to replace them. "And when you sell chicken in a pie," Mr. O'Brien reasons, "people do not stop to figure out how much it is costing them."

Egg "Exchange Day"

Retail merchants at Waverly, Ohio, on the first day of spring, held an egg "exchange day" and offered farmers 2 cents a dozen more than going market prices for eggs in exchange for any commodities they had to sell.

The more eggs the farmers brought, the more new spring merchandise they could buy from the more than forty merchants who cooperated in the event. The secretary, C. Lewis Riddenour, hit upon this novel event which had a direct appeal to the farmers about this rural town. With their eggs, farmers and their wives bought everything from ice cream cones to tractors.

—New Hampshire Breeder, June, 1940.

Home Canning of Chicken

Reprinted from Featheredfax

CANNED chicken is probably as salable a product as can be produced by the home canner, provided, of course, that the producer has access to a market which can afford to pay the price that good canned chicken should command.

The best type of bird for canning is the two year old fowl. Young birds may be canned, but the texture and flavor of the meat is not as good as that from mature birds. Old roosters are the least desirable and should not be canned for sale.

There are two methods of packing the chicken: (1) with the bones, (2) as boneless chicken. Chicken canned with the bones lends itself to more varied uses since the canned meat may be fried or the meat may be removed from the bones and used in the same way as boneless chicken. Also, it is sometimes claimed that meat canned on the bone is better flavored. The chief disadvantage is that a pack of chicken canned on the bone is not as attractive as the boneless chicken and that is an important factor in the marketing of the product. On the other hand, the labor and time expended in packing the boneless chicken is much more than for that canned on the bone. One successful home canner puts out both types of canned chicken as well as two or three sandwich spreads and a variety of soups and broth.

Chicken Canned on the Bone

The chickens should be dressed as for cooking. The fowl is cut up as for serving into breasts, thighs, legs, backs, wings and necks. The bony pieces, (backs, wing-tips and necks) should be covered with water and simmered until tender to provide soup stock. The skin and meat picked off the bones may then be used for a chicken spread.

The meaty pieces may then be pre-cooked in the oven at 350 degrees Fahrenheit for 25 to 30 minutes or in simmering water for 8 to 10 minutes. The hot pieces of chicken are then filled immediately into quart jars in such a way as to get the most attractive pack and to most economically utilize the space. Precooking is not absolutely necessary, but provides an added factor of safety in processing. It shrinks the meat to facilitate better packing, and it removes some of the fat which usually rises to the surface of the jar and spoils the appearance of the pack. If the chicken is not precooked, the raw pieces of meat are filled directly into the jar.

Wide mouth quart jars are better than the usual type as they are more

Massachusetts State College, Amherst, Mass.
(Featheredfax, Jan. 1940)

easily filled and there is less chance of breaking the meat from the bones when the pieces are taken out for use. If the end of the drumstick is cut off, it is possible to pack half a fowl in a pint jar. A tall No. 2 tin may also be used, but it is necessary to heat the can and contents to 150 to 160 degrees Fahrenheit before sealing the can. This can be done either in an oven or a water bath such as a boiler, provided the water does not splash into the can.

After packing, a teaspoonful of salt per quart jar is added to the meat and it is covered with hot water. The jars are partially sealed and processed at 240 degrees Fahrenheit (10 pounds steam pressure) in a pressure cooker for 90 minutes. When the pressure falls to zero, the cooker is opened, the jars are removed and sealed.

The soup stock should be strained through four layers of moist cheesecloth to remove the fat and packed into pint jars to within three-fourths inch of the top. A tablespoonful of rice or barley and bits of chicken may be added, the jar partially sealed, and processed for 35 minutes at 240 degrees Fahrenheit. After processing, the jar should be fully sealed.

The giblets should not be canned with the other meat as they will flavor and discolor it. The livers should be canned alone, although it is all right to can the gizzards and hearts together. Appetizing spreads can also be made from the livers and other giblets.

Boneless Chicken

The fowl is prepared as for roasting. That is, after drawing, the wing tips and feet are cut off, but the bird is cooked whole. Cooking may be in the open kettle with water to prevent burning, or in the steam pressure cooker or steamer. The cooking should proceed to the point where the meat may be easily removed from the bones. In the steam pressure this will take 30 to 40 minutes at 10 to 15 pounds pressure for a 4 to 5-pound bird.

When the chicken has cooled sufficiently to handle, it is placed on a large platter. The skin is removed and the fowl is cut into a regular number of pieces. The bones are carefully removed, leaving the larger pieces such as legs, thigh and first joints of wings intact. The breast may be sliced, or, preferably, the large muscles are separated into their individual parts. The smaller pieces of meat are picked or scraped from the back, ribs and neck and kept separate from the remainder. Also, the white and dark meat is placed in separate lots. The bones and skins are reserved for soup stock.

The prepared meat is packed into clean, dry, pint or half pint jars. The outer layer should be made up of the more attractive slices of light and dark meat. The center may be packed with the small pieces. A half teaspoonful of salt is added to each pint jar and hot broth from the cooking vessel is added to within one-half inch of the top. The jars are partially sealed and processed at 240 degrees Fahrenheit. (10 pounds pressure) in the pressure cooker. When the pressure falls to zero the cooker is opened and the jars are removed and sealed.

The skin and bones can be covered with water and recooked to get more soup stock.

Barbequed Chicken

BROILERS weighing 2¾ pounds alive are best suited for barbequing. After being cleanly picked, they are cut in half starting on the back on one side of the back bone. With the birds opened up, they are easily drawn including the removal of the lungs and crop. The back bone is completely removed by cutting on either side of it. The breast bone is removed by cutting on both sides at the front, after which it can be easily and cleanly removed by pulling it from the flesh. Poultry boning shears help a lot in the preparation of birds for broiling.

Equipment for Barbequing

For a large group, a pit 18 inches deep and 3 to 4 feet wide is required. Wood is burned in the pit until there are 3 or 4 inches of coals. Charcoal may be added to quickly increase the amount of coals. Broiling is done on 16 gauge fox wire—1½ inch mesh – tightly stretched over the fire. The distance depends upon the quantity of coals and the amount of heat they are producing.

For small groups, charcoal broilers are available. These burn either briquettes or charcoal, and types are available that broil both sides of the bird at the same time. This type is best.

Barbeque Sauce

Chickens are salted as they are placed on the wire. They are turned at frequent intervals with a long handled fork. Barbeque sauce is added frequently with a long handled pastry brush or swab. The recipe for the barbeque sauce is—½ pint vinegar, ½ pint water, ¼ pound butter, 1 tablespoonful salt. It requires 15 to 30 minutes to broil 2¾ pound chickens depending upon whether they are broiled from one or both sides at the same time. When the flesh on the legs and breast cracks, it is a good indication that it is done.

—G. T. Klein, Featheredfax, May, 1940.

Silage for Chickens

By EMIL G. GLASER

Reprinted from American Poultry Journal

ONE of the most recent developments in feeding greens has been putting up legumes, cereal grasses, and hay grasses in the form of a molasses fermented silage and feeding this during the times of the year when greens are scarce, as in winter and dry spells in summer.

One of the first attempts to put up some sort of fermented green feed was made by Wisconsin farmers. Prof. Halpin, of the Wisconsin Station, tells about farmers in his state making sauerkraut from lower grade cabbage. This was fed to the farm flock, and apparently supplied their needs for green feed, for the results were good. This, then, can be called the original chicken silage.

Another early attempt to provide a succulent green feed during winter was in those sections where large quantities of beet pulp were produced in the sugar refining process. This was fed to chickens with good results and is continuing to be highly regarded by farmers in these areas. In northern Iowa, dried beet pulp is used quite extensively. It is simply wetted down with water and fed to laying hens. The hens relish it.

Results with Legume Silage

The Arizona Experiment Station has been working with legume silage made from alfalfa. Both dried and natural legume silage were tried on broilers, turkeys, and laying hens. The wet, or natural legume silage, did the more efficient job. It brought extra growth to the turkeys and broilers, and the laying hens produced more eggs at a lower feed cost. The station explains the results by pointing out that legume silage aided digestion of the mash and grain feed more completely, as well as supplying such nutrients as vitamin A, Riboflavin, the Filtrate Factor, and the new grass juice factor.

Another look into legume silage for chickens was carried on at the Tennessee Station the past few years. The silage used here was made of red clover and alfalfa, and was fed to Leghorn cockerels 7 weeks old. These birds registered gains as high as 215% in 8 weeks, compared with 173% for cockerels not getting the legume silage. Young pullets on this silage produced 61% more eggs during January and February than those not getting it.

The Kansas Station, which first produced the formula for storing the juice of tender young cereal grasses in buttermilk and other milk products, has gone right ahead with its green feed work, with the result that Prof. L. F. Payne has done some interesting things with ensilaged cereal grasses, in this case made of tender young oat plants.

How to Make It

This silage was fed to 100 hens for 23 weeks during the winter. The chicks produced from this lot showed higher hatchability, and the livability as pullets was higher than in two check lots. Egg production was better and profit per hen was greater.

Even ordinary weed-free lawn grass may be used in making silage for the chickens. According to Gus Walters, a Vineland, New Jersey, poultryman, it can be put up very successfully. Here is how he prepares it:

Airtight 50 gallon barrels are used to store good clean lawn grass. Lawns are fairly teeming with good grass of this sort by the middle of May and early June, and spring is the best time to put up the grass. Cereal grass grown from oats may be used later on when lawn grass is tough and stringy.

Immediately after cutting, the grass is put into the barrels and tamped down tight. On top of the tightly tamped grass, 4 gallons of any good stock molasses, mixed with 4 gallons of water, are poured, being careful to get the mixture over the entire top layer of the grass. The molasses seeps down gradually through the grass, assuring uniform fermentation.

The top or lid of the barrel has to be weighted down heavily with weights of 300 to 400 pounds in order to get the pressure on the molasses-saturated grass ordinarily to be had in the large silo.

The filled barrels are stored in a cool, shady place for several months, after which the fermented ciderlike smelling succulence is ready to feed. The top layer will look moldy. This should be scraped off until the fresh silage is reached. By taking each day's feeding from the entire layer a new surface is exposed often enough to prevent spoilage. The lid may be left off, once the barrel is opened.

The New Jersey poultryman feeds a quart of the silage to each 100 layers.

An Inexpensive Feed

In filling a barrel with lawn grass, the job may be done as the grass is available. Thus, if it is necessary to fill a barrel little by little daily until full, this may be done, the only precaution being to tamp down the grass thoroughly each time any is added. The molasses-water mixture may be added either as the barrel is filled or after it is filled and has been tightly tamped down.

American Poultry Journal, 536 So. Clark St., Chicago, Ill.
(American Poultry Journal, June, 1940)

A similar process to preserve cereal grass and legumes is used by experiment stations working with fermented feedstuffs.

Crops that can be turned into silage include alfalfa, medium red clover, mammoth red clover, alsike clover, and Ladino clover among the legumes; timothy, redtop, orchard grass, and blue grass among the true grasses, and oats, wheat, barley, and rye among the cereals. Oats is considered the cheapest among the cereal grasses. The Kansas Station figures the cost of oat grass silage at about $1.00 per 100 lbs. It is an economical way to provide green feed.

And Now—Turkey Steaks!

Several weeks ago Missouri's Commissioner of Agriculture gave a dinner in Jefferson City for a group of friends. They were more than a little puzzled by the meat – and curious, too. "It's swell," one woman said, "but what is it? I'd say it might be turkey. But it doesn't look like it."

It was turkey, however – turkey steak! Now two of the leading hotels in St. Louis are featuring it and it is also being served at other hotels in Jefferson City and Columbia.

The meat of the turkey is removed from the bones with a special boning knife. It is cut into steaks of light or dark meat or both in any size from a half-pound up. The steaks are first fried slowly in melted fat in a heavy covered skillet and then steamed.

Much as people like turkey, it's a hot job – particularly this time of year–to roast a big bird. And the occasions on which a person can use a big turkey are limited. But a couple of turkey steaks–that's something different again!

—Frank Priebe's Weekly Letter to Poultry Raisers, Copyright, 1940.

Keep Range Grass Short

Short, green grass on range is an asset, but long, coarse grass is frequently a liability. Long grass not only invites impacted crops, but tends to reduce the area over which the birds will range. The birds knock down and tramp in such grass, which makes for more difficult cutting later. For best results, keep the grass on range cut short.

—Edward S. Walford, Poultry Item, June-July, 1940.

POULTRY RESEARCH

Phenothiazine Effective in Removing Cecal Worms

Doses of phenothiazine in feeds and capsules were found highly effective in killing and removing cecal worms in chickens in a test carried on by Ernest C. McCulloch and Lyle G. Nicholson of the Division of Veterinary Science, State College of Washington, as reported in the July, 1940, issue of Veterinary Medicine.

A farm flock of heavily infected S. C. White Leghorns was purchased and subjected to various tests to determine the effects of different dosages and varying methods of administering phenothiazine.

Although dosages as heavy as 25 grams failed to produce any harmful effects, it is recommended that a reasonable dose would be one of 0.05 to 0.5 grams. Single treatments have been highly effective, but slightly better results were obtained by repeating the doses. Flock medication by mixing the drug in the feed proved effective although most certain results were obtained by administering the drug in capsules.

Records of egg production made before and after the drug was administered show no appreciable difference and it is concluded that the drug has no noticeable affect on egg yield. One of the birds which received 25 grams of phenothiazine was killed and eaten and no effect on meat flavor was noted.

The low cost of the drug makes it practical for common use. Further experiments are underway to determine the most desirable dosage.

Nicotine Compounds Control Large Roundworms in Poultry

By applying the principle of colloidal holding, there has been made available to the poultry industry a parasiticide for the control of the large roundworm, reports D. E. Davis of Petaluma, California, in the February, 1940, issue of Veterinary Medicine.

The compound is insoluble in the secretions of the upper digestive tract, but releases the nicotine at a rate sufficient to destroy the parasite (and below the rate of absorption into the body) when reaching the alkaline portion of the intestine.

The product can be made into a tablet for individual treatment, or in a granule form to be mixed in a moist or dry mash feed for flock treatment. It has no ill effect upon birds of laying age and consequently no detrimental effect upon egg production.

Molasses Bran Unsatisfactory in Control of Coccidiosis

Unsatisfactory results on the use of molasses bran for coccidiosis control are reported by Arne Jalenen in the San Joaquin Valley Poultryman for May 20, 1940.

Forty cockerels were involved in the test conducted for the San Joaquin Valley Poultry Producers Association. One pen of 14 cockerels received sporulated coccidia through the mouth and the birds were then placed on a coccidiosis control mash (high milk content). A second pen of 13 birds also received sporulated coccidia through the mouth followed by molasses bran (15 per cent cane molasses by weight) 2½ days later, while in the third pen seven birds were given sporulated coccidia and six were not. This third pen received the regular growing mash.

There was no mortality in the pen on the high milk coccidiosis mash, and the birds gained 25 per cent in weight in the 10-day period. Mortality in the molasses bran pen was 23 per cent, and the gain in weight was only 7 per cent. In the control pen on the regular growing mash, there was a mortality of 19 per cent among those cockerels receiving the coccidia and no loss among those receiving none.

While there exists no experimental work to prove the value of molasses bran for coccidiosis control, it is doubtful whether the number of birds involved in this test is sufficient to make the results conclusive.

Breeding for Resistance to Typhoid

A definite increase of resistance to fowl typhoid has been made through the use of parents which have been selected for their resistance by actual test in studies carried out at the Iowa Agricultural Experiment Station by E. W. Lindstrom, J. W. Gowen, and N. F. Waters.

In three lines of chicks, line A showed a survival percentage of 85 per cent; line B, 86 per cent; and line C, 67 per cent. These percentages are to be contrasted with the survival value of the susceptible line, 2 per cent, according to the report published in the Iowa Experiment Station's 1939 Report on Agricultural Research.

Egg Weight Hereditary Trait

A study extending over a 12-year period by N. F. Waters, E. W. Lindstrom, and J. W. Gowen, of the Iowa Agricultural Experiment Station, has been made to determine the effects of inbreeding and crossbreeding on certain characteristics of the S. C. White Leghorn.

It is concluded that egg weight is a highly hereditary trait as approximately 55 per cent of the variance between the egg weight performance of those dams mated to a given sire could be described as the genetic portion of the variance. A selection of dams irrespective of the sires they are mated to and having an average egg weight above 60 grams will result in an increased number of progeny whose egg weight will satisfactorily meet the trade requirements established for either hatching or marketing purposes, says the report in the Iowa Experiment Station's 1939 Report on Agricultural Research.

Hatchability of Eggs Measured by Specific Gravity

Eggs of low specific gravity, and thus of low percentage of shell give distinctly poorer hatching results than those in the higher brackets, according to S. S. Munro, reporting on an experiment conducted at the Central Experimental Farm, Ottawa, Canada, in the Canadian Poultry Review.

It is well known that shell strength depends largely on shell thickness, and, thus, on the proportion of total egg weight which consists of shell. Various studies have proven that specific gravity of the egg is an accurate measure of the percentage of shell and evidence secured indicated that the strength of the shell of a newly laid egg was an indication of its hatching power.

To test eggs for specific gravity, and thus for hatchability, a critical salt solution is made by adding heavy brine to tap water until a finely graduated hydrometer shows that the solution has a specific gravity of 1.078. Eggs, which are strictly fresh, are put into this solution, and only those which sink should be incubated. The solution should always be kept at about 70 degrees Fahrenheit when the eggs are being tested.

The specific gravity test is a measure not only of the best hatching hens, but of the best hatching eggs from these best hens. In tests involving over 5,000 eggs, the eggs passing the test when fresh have shown an average hatchability 30 per cent higher than those failing to pass.

Effects of Treated Cartons on Odor and Flavor of Eggs in Storage

In an effort to determine the effect that treating cartons with oat flour had on the retardation of the characteristic strawboard odor and flavor common to stored eggs, O. F. Gaebe carried on a series of tests at the University of Illinois. The results were reported in the U. S. Egg and Poultry Magazine for June, 1940.

Eggs taken from a farm flock of White Leghorns, were candled, graded, and packed in a new 30-dozen case on the third day after being laid. Half the eggs were packed in strawboard fillers and flats which had received a treatment of avenex and half in untreated fillers and flats.

Eggs were tested for odor and

flavor by six student judges. From the results obtained in sampling 85 pairs of raw eggs and 85 pairs of cooked eggs by each of six judges, one member of each pair of eggs having been stored in avenized and the other in unavenized strawboard fillers and flats, it was concluded that:

(1) There was no indication that the flavor of raw eggs stored in avenized cartons was spuerior.

(2) There was a slight indication that the flavor of cooked eggs stored in avenized cartons was more desirable.

(3) There was a rather marked preference for the odor of eggs stored in avenized cartons.

Most Electric Brooders Found to be Satisfactory

Any reasonably designed electric brooder that is sturdily built, adequately insulated and has a heating element large enough to supply heat at brooding temperatures in all seasons, but not so large that it consumes an excessvie amount of electric current, will probably operate successfully in the hands of a good poultryman, says Paul R. Hoff in a progress report of work carried on by the New York State College of Agricultural, the Empire State Gas and Electric Association, and the Beacon Milling Company, Inc.

There was no "best" electric brooder in any of the three brooding trials. Incorporated in each brooder were features which contributed to its successful operation and also features which could be improved.

Brooders of 2,000 to 3,000 square inches of floor area which are equipped with heating elements of 575 to 800 watts demand, appear capable of successfully brooding chicks even for early season cold room brooding, providing they are adequately insulated. For such hovers, additional heat in the brooder house is not necessary.

Adequate insulation means insulation equal to a minimum of ½ to ¾-inch insulating board over an area of the hover equal to most of the floor area occupied. Excessive litter moisture can be eliminated by using an adequately insulated hover.

It seems reasonable to assume that large heating elements with accompanying heavy fuel consumption are being substituted in some brooders for adequate insulation to keep litter moisture down, says the report.

Only a small difference in the amount of moisture which has condensed and collected in the litter is apparently necessary to produce a great difference in its appearance. A moisture content of 11.9 per cent seemed to give fairly dry litter, while moisture of 18.1 per cent gave the litter an appearance of being nearly saturated.

Potential Income in Poultry Dressing Wastes

In dressing poultry, we today accumulate some blood and feathers in the killing and plucking room. Outside of that, about a billion pounds a year of so-called New York dressed poultry, "dressed in the round," is shipped to distant markets, where, at various stages, on the butcher's block, on the table, and in the garbage can, more than half of the bird is almost completely wasted. If the birds were prepared down to the edible portions at the factory, most of the waste could be recovered.

Due to the small size and the difficulty of removing only the edible parts at the table, a larger percentage of poultry is probably wasted than the percentage of heavier meats wasted. When buying a steak from a well-fatted animal, surplus is often cut off after weighing and more waste goes into garbage than is the case with poorer, leaner flesh. This waste of surplus fat constitutes quite a sales barrier for the better class of meat reaching the lower-priced trade. It would be possible, no doubt, to lower the cost of all high quality meats offered at retail, including poultry, if the surplus fat and other waste could be recovered at the packing plant.

Consider what poultry waste consists of. The heads contain bone and brain tissue, a pituitary gland and a certain amount of meat scrap. Then there are the viscera, in which are the pancreas, the kidneys, the sex glands, the lungs, the gizzard lining. There is the little preen gland in the tail. It may weigh only two or three grams, but, out of a billion pounds of poultry, there may be a yield of approximately a thousand tons of preen glands annually yielding products which might sell at an exceedingly high price if suitable for cosmetic or other high value uses. The offal of a billion pounds of poultry would weigh 250,000 tons, and their recovery is already profitable.

Then there are the fats. The more edible portions of cut-up poultry consist of lean meat and tissue fat. Some poultry contains surplus fat, part of which could be removed and sold as such. Some of these fats are suitable for cosmetics. Some of them are rich in vitamins. The bones yield marrow and mineral. In the skin, there are gelatins and possibly leather.

It is obvious from the way these billion pounds of poultry now go to market that there is in the recovery of wasted products a potential factory income with which to support a more elaborate processing of eggs and poultry, which in turn would lead to more intelligent production for market purposes. Each discovery and new use would give the merchant better products to merchandise and the advertiser invaluable support in his publicity.

—Excerpt from booklet, "The Business of Seeking Change," by Paul Mandeville, secretary, Poultry Products Revolving Fund.

Diary of a Poultryman

By PERCY S. WHITE

Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

July 1—Kid White has been notified by the tour committee of the Poultry Congress that Oak Chapel has been selected to provide lunch for the tour scheduled to this neck of the woods, on the 31st. This means that the Ladies Aid is going to have its hands full. On Friday, August 4, another tour is scheduled to visit my ranch, Walter Buss, the Ohio Experiment Station, and the Wooster Egg Auction.

While I always try to keep the ranch in good shape as far as rubbish, grass, weeds, and whatnot are concerned, I think it will be a good policy to put out a little special effort.

July 4 — Donnie and I were all alone with the work, as every one else wanted to celebrate the occasion. We just kept up the regular work, which I think we did to a fare-ye-well. I even had time to pack the eggs during the day.

The calendar calls today Independence Day. History states that this is a fact, so I guess there is no question about it, but how anyone can be independent in this chicken business is more than I can see. For some reason or other, this stock has to be fed, watered and cared for in general. So Donnie and I worked today and hope to take our holiday to go to Cleveland to see the Poultry Congress, the World's Fair of the Poultry Industry. It will be the first time that I have ever seen it, and will probably be the last.

July 5—Tomorrow I am going to get rid of some more cockerels. That gang of roosters out on the range is running hog wild, and this term covers lots of activities. It makes no difference how cocky they are while on the range, they sure tame down quick when placed in a coop. Bad Boy Bill soon becomes Sweet William.

July 6—One little pig might have gone to market and one stayed at home, but in this case, 500 cockerels went to market and a whole army stayed at home. But it is a question of time, only time, until the whole works will be gone. Of course, I know there will be a few Smart Alecks that will start roosting in the trees, but their time will come when we catch the pullets in the fall. We always round up every bird sooner or later, but it will be well nigh Thanksgiving before we get the last one.

Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.
(Everybodys Poultry Magazine, June-July, 1940)

A letter from W. H. Vernon, extension poultryman of Iowa, whom I haven't seen in 20 years, says that he will be here in time for supper on the 27th.

July 7—Ralph Treat invited me to go with him, Director Buss, and President Lott to Napoleon, Ohio, next Monday. A new auction has been organized there and the first sale will be held on the tenth. We will go as good will ambassadors. I am expecting to have a good time; we four always have a good time when we go anywhere. It will take the whole day to make the trip, so I feel justified in calling it one of my famous one day vacations. Last year the four of us went to Versailles, Ohio, to their first day sale. That trip took a night and a day.

July 8 — We will take one more week to clean up and catch up on odds and ends before starting the annual cleaning. During the past few days all of the brooder stoves have been removed from the colony houses. They have been thoroughly cleaned, and I mean clean, oiled with crank case oil, and wrapped in burlap. All of the oil pipes were blown out with an automobile tire pump to remove rust and loose particles of foreign material. The pipes will get another blowing out next spring when the stoves are installed. Brooder stoves usually rust out more than wear out. I figure that these tin can oil burners should last 10 years if cared for properly.

July 11—Lyman Peck called from Fort Wayne at 7:30 this morning. It was a special invitation for Verne Chamberlin and I to attend the Second Nutrition Conference for Veterinarians tomorrow, July 12th. And so we are all set to leave for Decatur and Fort Wayne at 5 o'clock tomorrow morning. The little truck has been shampooed and polished. The rear end is loaded down with four bags of sand so that it will stick to the road and not try to fly. I am not so big that I can't keep my feet on the ground, and I want the truck to do the same.

July 13 — I feel like I have been given the works. Verne and I left Fort Wayne at 11:30 last night and got home at 4:15 a.m., driving all night. I got home in time to change my clothes, take a drink of real water and get out on the range at 4:30. It is marketing day for another 500 young roosters, and these cockerels have got to be moved, and there is to be no defalcation about it. I was standing on the auction platform at 6 o'clock with the first load of 10 coops, 25 cockerels to the coop. "Kid" White and Harold cooped the second load while I was away. A hasty breakfast and I highballed the second load to town. Yes, the Old Man has had the "works" during the past 36 hours and that old straw mattress is going to feel mighty good in a few minutes.

July 14 — It seems to me that I have been on the road too much during the last few days. Just a little too much rolling stone attitude for the best results. This has been the schedule: Monday, Napoleon, Ohio; Tuesday, took eggs in; Wednesday, Fort Wayne; Thursday, took cockerels in; Friday, delivered eggs. And the Poultry Congress starts two weeks from today; it is high time we were starting the fall cleaning.

July 15—Ralph Howman has the only large field on the ranch out in corn. That is, he planted it to corn, but 4,500 chicks living on two sides of the field—well, I think they ate my share of the corn before it was knee high to a grasshopper. They have "mowed it down" as Charlie McCarthy says. In the evening, as the sun goes down, a whole army of them spreads out across the field, and the results are the same as a grasshopper plague. Young green corn is hot stuff for green feed, but a wee bit expensive, so to speak.

July 19—The boys are tearing into this cleaning business. Saturday night we doubled up the birds that were on the first floor of the barn. Monday morning cleaning was started. Last night after supper floors and dropping boards were soaked with crank case oil. This afternoon the litter was spread, the nests fixed, and mash and shells placed in the hoppers.

Walter Buss will be out tonight to make the blood tests as the birds are moved. Yes, the eggs will go to the hatchery in the spring.

July 20 — Business is booming in this neck of the woods. A load of cockerels was taken to the auction before breakfast with a return load of corn. Breakfast, and then the old daily grind. Cleaning was started on the second floor.

July 24—It all goes to show what good breeding methods will do if continued year in and year out. So far, in 805 birds, Walter Buss has only found three reactors to the blood test. He was out tonight with his crew to test the second floor as they were moved down from the third. Tomorrow morning we will start the ball to rolling again by moving upstairs. I am trying to get the cleaning along to such an extent that the west end of the block house will be cleaned and open for inspection when the second Congress tour arrives August 4.

July 25—Inspector Ralph Sheppard has started his regular summer grumbling about interior egg quality. My observation is that the heat affects the inspectors as well as the eggs.

July 26—It seems that it makes no difference how many cockerels I sell, the young birds still eat an awful amount of feed. Donnie White is taking care of them now and he sure is busy "toting" mash and grain. The birds are large enough now to eat whole corn. I never feed cracked corn because it costs so much—too dear, so to speak. Tomorrow, I am going to sell a couple of coops of old running gears. They are the cull birds that Walter Buss picked out Monday night. It seems that the prime requisite for soup stock is that the birds be able to stand on their feet.

July 27—Vernon phoned from Van Wert, Ohio, that he wouldn't be able to make it by supper time. So the family had an exceptionally good supper; we had the company supper all by ourselves.

Three coops of cockerels and two of running gear hens were sold today. The hens won't bring very much, but they are off my feed, and this is an item well worth considering.

July 28—Vernon and I hadn't seen each other for over 20 years, which knocks a fair size chunk out of anybody's life. Yes, he and his wife and daughter got in at 10 o'clock last night. We talked until 4:30 this morning; ate breakfast at 7:30 and then they left for Cleveland at 9 bells. Seemed to think he could make it in about 45 minutes when he found out it was only a 50 mile trip. I advised him to at least slow down when he went through the Cleveland Public Square.

There were many things to discuss, and it wasn't all shop talk either. Twenty-three years ago we were both young boys; today we are middleaged men with family responsibilities. We have seen war and depression. Both of us have many gray hairs, but our visit dealt more with the past than the future. We lived the past over again and left the future to take care of itself.

July 29—Kid White has answered the 'phone 40 times today. It seems that the ladies of the Aid are all excited about the lunch for the Congress tour Monday. Each one is to prepare a certain portion of the food. Upon Kid's orders, I raided our cold storage locker and brought home six quarts of baby lima beans, four quarts of cherries for pies, and other articles too numerous to mention. Tomorrow I will bring out ice for two freezers of ice cream. Even if tomorrow is Sunday, there are going to be many hot cook stoves in the community. The ladies are going to give the tour folks a regular old fashioned country dinner.

July 31—A personification of love's labor lost. Kid White worked all day yesterday baking pies, making ice cream, preparing other food. So did many other Ladies Aiders. At 6 o'clock a long distance call from the Congress said, "No tour tomorrow, can't get a crowd large enough to justify."

Then Kid White and I spent half the night driving around telling those who had no phone that the project was shot. This morning she started distributing ice cream and cherry pies around the neighborhood. I like ice cream and cherry pie too, but not three times a day.

One Way to Expand Production

One of our neighbor poultrymen was discussing with me his poultry operations as to how he could increase his number of hens without a great deal more investment.

I asked, "Why get more hens?"

"I wouldn't be satisfied unless I was expanding," he replied.

I contend that you can expand without getting more hens. How about expanding your egg production a dozen eggs per hen per year, expanding by decreasing your replacement by 10 per cent, expanding by decreasing your cost of production by 2 cents per dozen or increasing your price received by 2 cents per dozen, or by a combination of a few more eggs per hen, a few less hens replaced or a small decrease in cost or increased price per dozen eggs?

With expansion along these lines, the one man unit in place of 2,000 hens need be only 1,600 hens. An increase of one dozen eggs per hen or about 25 cents will make the income from 1,600 hens equal that from 2,000 hens. Reducing the replacement 10 per cent will accomplish the same thing. Again, decreasing the cost of production or increasing the price received 2 cents per dozen will bring the income from 1,600 hens to that from 2,000 hens.

—Herbert A. Hogsett, San Diego Poultry Journal, June 10, 1940.

Keeping the Laying House Cool

William Shuck, Woodlake, Calif., poultryman, has a cooling device for his chicken house. A pipe for water runs the length of the house across the top. The water trickles through small holes in the pipe, runs over barley sacks which hang on the walls, and as it evaporates it cools the chicken house.

—Pacific Rural Press, June 15, 1940.

Hatchery Industry Survey

By W. D. TERMOHLEN,
C. C. WARREN and G. G. LAMSON

Condensed from U.S.D.A. Bul. PSM-2

A COMMERCIAL hatchery is defined as being one which hatched and sold 500 or more baby chicks, or incubated 1,000 or more eggs for hire, generally called custom hatching.

The commercial hatchery industry is as widespread over the United States as any other phase of agriculture. During the period from August 1, 1937, through July 31, 1938, commercial hatcheries operated in every State and in all but 957 of the 3,070 counties. This widespread distribution of the industry is indicative of the increasing dependence of poultry and egg producers on hatcheries for their supplies of baby chicks.

There were found to be 10,533 commercial hatcheries that were operated during the 1937-38 hatching season. In addition, 1,105 hatcheries were found that did not operate at any time during the year, and 164 hatcheries were known to be engaged exclusively in hatching turkey poults or ducklings. A large number of hatcheries were also found that were being operated for the exclusive use of the owner, or were selling or custom hatching fewer chicks or eggs than the minimums established and previously mentioned. These three groups of hatcheries have not been included in this study.

Distribution of Hatcheries

Table 1 shows the number of hatcheries by States and geographic regions for the 1937-38 hatching season as well as for the 1934 season. For the country as a whole, the total number of hatcheries has decreased by 872, or 7.6 per cent, since 1934. The significance of this decrease, however, is questionable in some respects. It is not known for instance, how many hatcheries included in the 1934 total were not in operation at that time. According to estimates made by the Agricultural Marketing Service, 1934 was the year of lowest hatchery production since 1929, when information on this subject was first obtained. In conducting the present survey, 707 hatcheries were found to be operated for the exclusive use of the owner, but had been included in the 1934 survey as commercial hatcheries. Since most of these 707 plants were quite small, it is likely that many of them were selling baby

U. S. Dept. of Agri., Division of Marketing and Marketing Agreements, Washington, D. C. ("Chick Hatchery Survey—1937-38." Bul. PSM-2)

TABLE 1.—Geographical distribution of the hatchery industry in the United States, 1934 and 1937-38

State and region	Number of hatcheries			Total egg capacity		
	1934	1937-38	Percent change	1934	1937-38	Percent increase
				1,000	1,000	
Maine	190	204	+ 7.4	1,190	1,739	46.1
New Hampshire	145	202	+39.3	1,825	2,964	62.4
Vermont	56	54	− 3.6	316	537	69.9
Massachusetts	319	360	+12.9	3,888	5,592	43.8
Rhode Island	37	54	+45.9	321	581	81.0
Connecticut	144	143	− .7	2,532	4,386	73.2
New England	891	1,017	+14.1	10,072	15,799	56.9
New York	510	521	+ 2.2	7,135	9,729	36.4
New Jersey	224	213	− 4.9	5,411	7,775	43.7
Pennsylvania	635	592	− 6.8	14,445	18,909	30.9
Middle Atlantic	1,369	1,326	− 3.1	26,991	36,413	34.9
Ohio	831	687	−17.3	27,529	30,831	12.0
Indiana	609	540	−11.3	17,107	28,652	67.5
Illinois	600	542	− 9.7	20,717	29,811	43.9
Michigan	444	368	−17.1	10,759	12,853	19.5
Wisconsin	473	376	−20.5	9,266	12,756	37.7
East North Central	2,957	2,513	−15.0	85,378	114,903	34.6
Minnesota	458	472	+ 3.1	15,497	24,798	60.0
Iowa	757	681	−10.0	21,535	35,690	65.7
Missouri	572	417	−27.1	18,415	24,713	34.2
North Dakota	50	55	+10.0	1,003	1,775	77.0
South Dakota	124	116	− 6.5	3,608	4,995	38.4
Nebraska	330	259	−21.5	9,487	14,230	50.0
Kansas	595	414	−30.4	13,809	17,034	23.4
West North Central	2,886	2,414	−16.4	83,354	123,235	47.8
Delaware	53	49	− 7.5	1,854	2,320	25.1
Maryland	131	137	+ 4.6	2,835	5,038	77.7
District of Columbia	2	2	0	33	37	12.1
Virginia	179	172	− 3.9	3,864	6,504	68.3
West Virginia	49	62	+26.5	474	1,335	181.6
North Carolina	104	130	+25.0	1,273	3,595	182.4
South Carolina	66	66	0	1,047	1,715	63.8
Georgia	102	104	+ 2.0	1,316	2,572	95.4
Florida	79	88	+11.4	1,004	1,698	69.1
South Atlantic	765	810	+ 5.9	13,700	24,814	81.1
Kentucky	89	99	+11.2	1,733	3,576	106.3
Tennessee	64	109	+70.3	2,113	3,836	81.5
Alabama	80	99	+23.8	1,066	1,774	66.4
Mississippi	62	55	−11.3	888	1,386	56.1
East South Central	295	362	+22.7	5,800	10,572	82.3
Arkansas	62	89	+43.5	869	2,321	167.1
Louisiana	34	37	+ 8.8	505	824	63.2
Oklahoma	237	215	− 9.3	6,114	7,962	30.2
Texas	603	634	+ 5.1	12,524	17,914	43.0
West South Central	936	975	+ 4.2	20,012	29,021	45.0
Montana	18	21	+16.7	288	402	39.6
Idaho	62	50	−19.4	1,180	1,428	21.0
Wyoming	8	11	+37.5	156	236	51.3
Colorado	105	89	−15.2	2,412	3,575	48.2
New Mexico	16	13	−18.8	470	548	16.6
Arizona	25	25	0	470	716	52.3
Utah	41	27	−34.1	1,474	1,798	22.0
Nevada	2	4	+100.0	23	80	247.8
Mountain	277	240	−13.4	6,473	8,783	35.7
Washington	240	193	−19.6	5,331	6,158	15.5
Oregon	214	187	−12.6	3,456	5,388	55.9
California	575	496	−13.7	15,720	22,327	42.0
Pacific	1,029	876	−14.9	24,507	33,873	38.2
UNITED STATES	11,405	10,533	− 7.6	276,287	397,413	43.8

chicks in 1934 and have subsequently been withdrawn from commercial operations. Many, however, should probably not have been included in the former survey.

In spite of the decline from 1934 of 7.6 per cent in the total number of hatcheries, some regions of the country showed increases. In the New England States, for instance, the number of hatcheries increased by 126 or 14.1 per cent. The States south of the Ohio River and west to Texas generally showed increases. The States comprising the South Atlantic, East South Central and the West South Central regions showed a net increase of 151 hatcheries or 7.6 per cent. Outside of these four regions significant declines in the number of hatcheries occurred, ranging as high as 16.4 per cent in the West North Central region.

Capacities Larger

For the country as a whole there has been an increase of 121,126,000 in egg capacity or 43.8 per cent during the four-year period. While this may seem to be too great an increase in capacity to have occurred in only four years, it is largely substantiated by the fact that incubators of more than a 1,000-egg capacity each, comprising a total capacity of 111,450,000 eggs, were manufactured during the period 1935 to 1938, inclusive. In addition to this, there were 70,021 incubators of less than 1,000-egg capacity manufactured but it is believed that very few of these incubators are in use in commercial hatcheries. It seems, therefore, that the increase shown in capacity of the industry was greater than the capacity of new incubators manufactured. It should be noted, moreover, that the capacities shown in the 1934 survey were those that had been placed on file with the code authorities of the hatchery industry, and hatcherymen were only required to report their capacity that was actually being used. Since 1934 was, as mentioned previously, the year of lowest output since 1929, there was probably a large volume of idle capacity that year. This idle capacity was not reported to the code authority and consequently not shown in the 1934 survey.

Large Hatcheries Increased

In order to more properly study the decrease in the number of hatcheries and the increase in capacity, the 10,533 hatcheries were divided into nine capacity classes or size-groups. The number in each group with the respective capacities is shown in table 2.

Generally the same observations can be made concerning changes in capacities. Declines in capacity have occurred in those size-groups below 24,900 eggs and marked increases in all the groups above this amount. In 1937-38 the greatest aggregate

TABLE 2.—Relative importance of nine size-groups of hatcheries, 1934 compared to 1937-38

Size-group (1000 eggs)	Number of hatcheries			Total egg capacity		
	1934	1937-38	Percent change	1934	1937-38	Percent change
				1,000	1,000	
Under 5.0	4,934	1,450	−41.9	19,110	3,756	−28.5
5.0-9.9		1,417			9,917	
10.0-24.9	3,315	3,025	− 8.7	50,774	48,168	− 5.1
25.0-39.9	1,274	1,720	+35.0	39,370	54,108	+37.4
40.0-59.9	895	1,262	+41.0	42,481	61,124	+43.9
60.0-99.9	576	896	+55.6	44,744	66,826	+49.4
100.0-199.9	294	541	+84.0	38,790	69,816	+80.0
200.0-499.9	102	182	+78.4	28,946	52,905	+82.8
500.0 and over	15	40	+166.7	12,072	30,793	+155.1
All size-groups	11,405	10,533	− 7.6	276,287	397,413	43.8

capacity is found in the group of hatcheries ranging in size from 100,000 to 199,900 eggs each, while in 1934 the group ranging from 10,000 to 24,900 eggs had the greatest capacity. This marked shift in the predominant size-group, together with a decrease in the total number of plants has caused the average capacity per plant to increase from 24,200 in 1934 to 37,700 eggs in 1937-38, or 55.8 per cent.

More Hatchery Chicks Bought

As shown in table 3, it is estimated that a total of 781,745,000 chicks was hatched in the 1937-38 season. This represents an increase since 1934 of 72.4 per cent, or 328,317,000 chicks. This huge increase represents in part a shift from farm hatched to commercially hatched chicks and does not represent a corresponding expansion in the number of chickens raised. Between 1934 and 1938 there was an increase of only 7 per cent in the number of chickens raised on farms. Instead, the increase in hatchery chick production has occurred because the poultry industry has become more highly specialized. A much greater proportion of the total number of chickens raised is now being produced from chicks hatched by commercial hatcheries than was formerly the case.

In 1934 the Bureau of Agricultural Economics estimated that about 46.6 per cent of the chicks produced that year was either bought from commercial hatcheries or custom hatched by them. While no definite estimates were made for 1938, indications show that probably more than 60 per cent of the chicks produced was either bought from or custom hatched by commercial hatcheries. This increase in the proportions bought will in itself account for a major proportion of the increased production of chicks.

Another reason for the increased chick production has been the rapid growth of broiler production on a commercial scale during the last

TABLE 3.—Estimated number of salable baby chicks produced in 1937-38, compared to 1934

State and region	Estimated production of salable baby chicks		
	1934	1937-38	Percent increase
	1,000	1,000	
Maine	1,893	4,223	123.1
New Hampshire	3,088	9,318	201.7
Vermont	348	1,324	280.5
Massachusetts	7,622	14,769	93.8
Rhode Island	537	1,368	154.7
Connecticut	5,466	18,300	234.8
New England	18,954	49,302	160.1
New York	6,606	16,050	143.0
New Jersey	7,624	18,306	140.1
Pennsylvania	28,757	36,245	26.0
Middle Atlantic	42,987	70,601	64.2
Ohio	50,306	59,805	18.9
Indiana	25,111	66,662	165.5
Illinois	39,271	55,510	41.4
Michigan	19,230	22,061	14.7
Wisconsin	12,598	18,748	48.8
East North Central	146,516	222,786	52.1
Minnesota	22,083	34,375	55.7
Iowa	33,638	67,052	99.3
Missouri	43,044	61,189	42.2
North Dakota	941	2,470	162.5
South Dakota	4,558	8,924	95.8
Nebraska	17,686	24,471	38.4
Kansas	19,993	30,588	53.0
West North Central	141,943	229,069	61.4
Delaware	4,473	5,843	30.6
Maryland	5,272	15,202	188.4
District of Columbia	61	58	−4.9
Virginia	8,327	15,355	84.4
West Virginia	719	2,922	306.4
North Carolina	1,943	9,084	367.5
South Carolina	1,815	3,844	111.8
Georgia	2,664	6,161	131.3
Florida	1,594	5,322	233.9
South Atlantic	26,868	63,791	137.4
Kentucky	2,702	6,948	157.1
Tennessee	3,072	8,698	183.1
Alabama	2,316	4,362	88.3
Mississippi	1,562	3,490	123.4
East South Central	9,652	23,498	143.5
Arkansas	1,207	4,935	308.9
Louisiana	582	2,083	257.9
Oklahoma	6,881	14,567	111.7
Texas	13,056	34,992	168.0
West South Central	21,726	56,577	160.4
Montana	393	686	74.6
Idaho	1,788	2,328	30.2
Wyoming	236	344	45.8
Colorado	4,523	6,634	46.7
New Mexico	611	985	61.2
Arizona	591	1,317	122.8
Utah	1,451	1,851	27.6
Nevada	32	117	265.6
Mountain	9,625	14,262	48.2
Washington	7,917	9,079	14.7
Oregon	4,521	6,316	39.7
California	22,719	36,464	60.5
Pacific	35,157	51,859	47.5
UNITED STATES	453,428	781,745	72.4

few years. Estimates of the volume of this production range between 60 and 80 million broilers a year, which, with an assumed mortality of 20 per cent, would require between 75 and 100 million chicks annually. While perhaps 60 per cent of all farm chicks come from commercial hatcheries, practically 100 per cent of broiler chicks are obtained from this source.

The West North Central region is now the leading producer of chicks, having displaced the East North Central States since 1934. Iowa, with an increase of nearly 100 per cent since 1934, now leads all other States in hatchery chick production. Ohio which ranked first in 1934 now ranks fourth in importance.

Prices Paid for Chicks

Table 4 shows, by States and geographic regions, the average prices paid by farmers for 100 baby chicks and also the estimated total value of all the commercially hatched baby chicks. The average baby-chick prices, as shown by States, are published annually by the Agricultural Marketing Service and are the prices paid by farmers for baby chicks during the first 4 months of 1938. The regional average prices were computed on the basis of the number of chicks hatched in the region. It is interesting to note that baby chick prices are definitely highest in the New England and Pacific Coast States. It is in these two areas, of course, that commercial production of chicks and eggs is the most advanced.

Table 4 shows that the estimated value of all commercially hatched chicks in the United States was $70,007,000. This, however, should not be thought of as the total cash income of commercial hatcheries This total includes the value of all baby chicks, whether sold, custom hatched, or used by hatcherymen themselves.

While it is shown in table 3 that Iowa produced the greatest number of baby chicks, table 4 shows that the estimated total value of chicks produced in Indiana was the greatest. The next three highest States in total value are Ohio, Iowa, and Illinois.

The average value of hatchery chicks bought by farmers in the West South Central region was $7.75 per 100 and is the lowest regional price in the country. This is in spite of the fact that the production of hatchery chicks in this area since 1934 has shown a greater percentage increase than has that of any other region.

Utilization of Hatching Capacity

In the 1937-38 period, the estimated average eggs set per unit-capacity for the United States was 2.88 eggs, or an increase of 10.3 per cent above the 2.61 eggs reported in 1934. Declines occurred in 15 States, principally in the West North Central, the Mountain, and the Pacific regions. In about half of these 15 States, however, declines occurred from levels which were considerably above the average for their respective regions in 1934. The New England States, setting an average of 4.41 eggs per unit-capacity, led all other regions. This high rate of utilization was partially caused by the State of Connecticut, where the production of broiler chicks is very important. The West South Central region showed the greatest increase in 1937-38 over 1934 in eggs set per unit-capacity, increasing from 1.67 to 2.79 eggs set per unit-capacity.

TABLE 4.—Average price paid by farmers in 1938 for 100 chicks and total value of chicks produced in 1937-38, by States and regions

State and region	Average price for 100 chicks 1938	Total value of hatchery chicks 1937-38
	Dollars	1,000 dollars
Maine	11.30	477
New Hampshire	11.80	1,100
Vermont	11.10	147
Massachusetts	10.80	1,595
Rhode Island	11.90	163
Connecticut	12.00	2,196
New England	11.52	5,678
New York	10.80	1,733
New Jersey	10.90	1,995
Pennsylvania	9.30	3,371
Middle Atlantic	10.06	7,099
Ohio	9.20	5,502
Indiana	8.40	5,600
Illinois	8.40	4,663
Michigan	9.80	2,162
Wisconsin	9.80	1,837
East North Central	8.87	19,764
Minnesota	8.70	2,991
Iowa	8.00	5,364
Missouri	7.50	4,589
North Dakota	9.40	232
South Dakota	8.60	768
Nebraska	7.70	1,884
Kansas	7.80	2,386
West North Central	7.95	18,214
Delaware	8.90	520
Maryland	8.90	1,353
Virginia	9.00	1,382
West Virginia	8.80	257
North Carolina	8.60	781
South Carolina	8.10	311
Georgia	8.30	512
Florida	9.00	479
South Atlantic	8.77	5,595
Kentucky	8.10	563
Tennessee	7.90	687
Alabama	8.10	353
Mississippi	8.30	290
East South Central	8.06	1,893
Arkansas	7.70	380
Louisiana	8.30	173
Oklahoma	7.80	1,136
Texas	7.70	2,694
West South Central	7.75	4,383
Montana	11.00	75
Idaho	10.30	240
Wyoming	9.70	33
Colorado	8.60	571
New Mexico	9.30	92
Arizona	11.70	154
Utah	10.30	191
Nevada	9.50	11
Mountain	9.58	1,367
Washington	12.00	1,089
Oregon	11.00	695
California	11.60	4,230
Pacific	11.60	6,014
UNITED STATES	8.96	70,007

Better Hatches

During the period from 1934 to 1937-38, the average percentage hatch has increased from 63.9 to 68.2 per cent. In other words, hatcherymen obtained 4.3 more chicks from every 100 eggs set than they did in 1934. This increase in the percentage hatch of 6.7 per cent represented a definite lowering of the cost of producing chicks.

Approximately 49,000,000 more chicks were hatched from the total number of eggs set than would have been the case had the 1934 percentage hatch been experienced. If these chicks are valued at 8.95 cents each, the United States average price in 1938, the hatchery industry has lowered its total costs in this one respect by about $4,400,000.

The New England States experienced the highest percentage hatch with 70.8 per cent, followed by the West South Central region with 70.0 per cent. The three States on the Pacific coast showed the lowest percentage hatch, although in 1934 these States were slightly above the New England region. A possible explanation of this lower-than-average hatch on the West coast is the fact that sexing chicks and destroying excess cockerels are practiced there on a much wider scale than elsewhere. An analysis of individual returns from these States strongly indicates the possibility that some hatcherymen reported the number of chicks sold rather than the total number hatched. If this is true, then of course the destroyed cockerels were not reported, and consequently the percentage hatch was reduced.

There is less variation in the percentage hatch between states in 1937-38 than there was in 1934. In the New England region in 1934, for instance, there was a variation from 60.2 per cent to 68.5 per cent, a range of about 8 points. In 1937-38, however, there was a range of only approximately 4 points. In 1934, Arkansas had the highest percentage hatch with 75.9, while Wyoming had the lowest with 51.3, which is a spread of 24.6 points.

In 1937-38, the highest percentage hatch was 72.8 for Vermont and the lowest was 62.3 for Utah, which is a spread of only 10.5 points. This reduction in the variation between states probably indicates an improvement in, and a more widespread use of good breeding stock, as well as improved hatching technique.

Capacity Classification

Table 5 shows, by capacity classes, the total number of chicks hatched, the number of eggs set per unit-capacity, and the average percentage hatch. The comparable 1934 data are not available for inclusion in this table. Hatcheries with less than 10,000-egg capacity produced only 3.1 per cent of the estimated total number of salable chicks hatched. The hatcheries with capacities ranging between 100,000 and 199,900 eggs produced 17.2 per cent of the total number of chicks. This is a larger proportion than that produced by any other size-group.

As for the number of eggs set per unit-capacity, there is a slight increase as the size of the hatchery becomes greater. This upward tendency, however, does not appear to begin until hatcheries have a minimum size of about 60,000-egg capacity. Below this figure there does not seem to be a significant change between size-groups.

TABLE 5.—Salable chicks hatched, eggs set per unit-capacity, and percentage hatch, 1937-38, by size-groups

Size-group (1,000 eggs)	Salable chicks hatched		Eggs set per unit-capacity	
	Number 1,000	Percent of total	Number	Percent hatched
Under 5.0	6,855	0.9	2.65	68.9
5.0-9.9	17,000	2.2	2.49	68.8
10.0-24.9	85,520	10.9	2.58	68.8
25.0-39.9	95,160	12.2	2.58	68.1
40.0-59.9	107,388	13.7	2.59	67.8
60.0-99.9	124,322	15.9	2.74	67.9
100.0-199.9	134,208	17.2	2.84	67.6
200.0-499.9	128,311	16.4	3.55	68.3
500.0 and over	82,981	10.6	3.90	69.1
All size-groups	781,745	100.0	2.88	68.2

There appears to be no significant relationship between the percentage hatch and the size of a hatchery. However, the five medium size groups, 25,000 to 500,000 eggs, show a slightly smaller percentage hatch than do either the smaller or the larger groups. This may be related to the percentage of hatcheries owning their own flocks which was the lowest in these groups. The vast majority of specialized breeders are found in the smaller size-groups and this might account for the higher percentage hatch among the smaller plants.

Hatchery Operating Months

Nearly one-half of the hatcheries have an operating season of four or five months. Exactly 24.6 per cent of the 5,907 hatcheries which reported their operating period, operated for four months, and 24.4 per cent operated for five months. The number of hatcheries reporting operations for more than six months was 20.3 per cent, and 3.9 per cent reported operating during the entire 12-month period. As the size of the hatchery increases, the period of operation tends to be longer. In the eastern and far western sections of the country a larger per cent of hatcheries operate over longer periods of the year than is true in the central part of the country.

Nearly all of the hatcheries were operating in March and April, and over three-fourths of them operated during the 4-month period, February, March, April, and May. Only 7.8 per cent of the hatcheries operated in August.

The importance of the various months of the year, as measured by the percentage of hatcheries reporting as operating in each month, varies in different areas of the country. There were three areas with a similar operating period for the year, these being the New England, South Atlantic, and Pacific regions.

Number of Hatchery Flocks

In order to determine the extent to which hatcherymen are breeders, data were obtained regarding the number of hatcherymen who owned flocks. Table 6 shows the percentage of hatcheries in each region which owned flocks and the average number of hens in these flocks. Replies were received from 5,903 hatcherymen and of these 3,668, or 62.1 per cent, reported they owned a flock from which hatching eggs were obtained.

It was found that a greater percentage of the hatcheries in the New England, Middle Atlantic, and Pacific regions owned flocks than in the other regions. It is in these three regions that poultry production is a very specialized industry. It was found that 38.3 per cent of the hatcheries in the West North Central region owned flocks. Although poultry production in this area generally is a sideline farm enterprise, it constitutes a very large proportion of the total volume of poultry and eggs produced in the United States. Furthermore, chick prices in this area are almost the lowest in the country.

TABLE 6.—Percentage of hatcheries owning flocks, and average number of hens per flock, 1937-38, by regions

Region	Percent of hatcheries which own flocks	Average number of hens per flock
New England	94.2	1,613
Middle Atlantic	88.3	1,108
East North Central .	52.6	691
West North Central .	38.3	556
South Atlantic	64.2	719
East South Central .	64.1	427
West South Central .	51.5	480
Mountain	63.6	594
Pacific	77.9	1,298
UNITED STATES	62.1	935

When compared to the average-size flock of chickens on farms as reported by the Bureau of the Census, the hatchery-owned flocks as shown in table 6 seem quite large, ranging from approximately 400 hens in the East South Central States to over 1,600 hens in New England. The three chief areas of commercial production mentioned above have the largest-sized flocks owned by hatcherymen.

When the data are tabulated by hatchery size-groups, it is found that a greater percentage of hatcheries with less than 10,000-egg capacity own their own breeding flocks, and that as the size increases the percentage of hatcheries owning their own flocks decreases. However, the percentage increases again among those hatcheries with more than 200,000-egg capacity.

This same information was obtained in the 1934 survey and it was found that 54.3 per cent of the hatcheries replying owned flocks, compared to 62.1 per cent in 1937-38. This represents an increase of 14.4 per cent in four years. More important, however, is the fact that this increase occurred principally among the larger-sized hatcheries which produce a majority of the chicks hatched commercially in the United States. In view of the widespread adoption of flock-improvement programs among hatcherymen, there has probably occurred an improvement in the general quality of farm and commercial flocks.

Of the 3,668 hatcheries that reported owning flocks, 1,778 or 30.2 per cent reported that these flocks were their only source of hatching eggs. Strictly speaking, these hatchery owners can be termed breeder-hatcherymen in the true sense of the word, although it is realized that many outstanding poultry breeders buy a portion of their hatching-egg supply from outside sources. Regional distribution of these breeder-hatcheries is shown in table 7, and again it can be seen that the New England, Middle Atlantic, and Pacific regions lead in the percentage of all hatcheries that can be classed as breeder-hatcheries, as would be expected, the greatest proportion of breeder-hatcheries is in the smaller-sized groups.

Custom Hatching

In addition to their regular practices, many hatcheries hire their equipment and services, hatching the customer's eggs at a fixed price per egg set. This service of custom hatching, as it is known to the industry, is simply a matter of shifting the risk to the customer, who receives whatever chicks have hatched out of eggs supplied by him.

TABLE 7.—Percentage of reporting hatcheries classed as breeder-hatcheries, 1937-38, by regions

Region	Percent
New England	70.3
Middle Atlantic	58.4
East North Central	17.1
West North Central	11.0
South Atlantic	28.4
East South Central	19.8
West South Central	14.8
Mountain	25.9
Pacific	46.6
UNITED STATES	30.2

The percentage of hatcheries reporting in this survey doing custom hatching ranges from 23.1 per cent in the New England region, an area where breeder hatcheries predominate, to well over 80 per cent in the West South Central and the West North Central regions where the percentage of breeder-hatcheries is the smallest. A similar comparison is noted in the state percentages as evidenced by the fact that in North Dakota, 95.2 per cent of the hatcheries reporting did custom hatching, compared with 15.2 per cent in Maine. Of the 5,892 hatcheries in the United States answering this question, 64.6 per cent did custom hatching.

The variations between the geographic regions of the United States is much greater than between the size-groups of hatcheries. Custom hatching, as a practice, was more prevalent among hatcheries in the large size-groups than in the small size-groups.

Sale of Sexed Chicks

Though the art of sex determination of day-old chicks has been practiced for centuries by the Chinese, it is a relatively recent practice on the part of the hatcherymen of this country. Hatcherymen of the Pacific coast were first to adopt this practice commercially in 1933. During the 5-year period, 1933 to 1938, sex-separating of day-old chicks has spread over the United States and is now a part of hatchery routine of approximately one-fourth of the hatcheries.

This survey showed that 1,550 hatcheries, or 26.3 per cent of this total, sold sex-separated chicks. The great majority of the larger hatcheries sell sex-separated chicks, while this is true of only a few of the smaller hatcheries. Since skilled persons are required to do the work of sex-separating, it can be expected for a time at least that this practice will be found more generally in the hatcheries with the larger volume of production. Only 2.8 per cent of the hatcheries with less than 5,000-egg capacity reported selling sex-separated chicks. At the other extreme, 96 per cent of the hatcheries with more than 500,000-egg capacity sold sex-separated chicks. As hatchery-size increases, a larger percentage of hatcheries reported the practice of selling sex-separated chicks as a part of their business method. There is also considerable variation in different parts of the country in the extent to which the hatcheries in the various size-groups have adopted this practice.

The sale of sex-separated chicks is a more common hatchery practice in the Pacific Coast States than in any other area of the country. In that area 63.5 per cent of the hatcheries reported selling sex-separated chicks. Sexing of chicks is least practiced in the South Atlantic area. Except for the East North Central region, where 40.9 per cent of the hatcheries reported selling sex-separated chicks, it appears that in moving eastward from the Pacific Coast States there is in general a gradual decrease in the percentage of hatcheries utilizing this practice. Contacts with hatcherymen indicate, however, that there can be expected an increase in the number of hatcheries adopting this practice, particularly along the Atlantic Seaboard.

In three States, Arkansas, Nevada, and Wyoming, no hatchery reported selling sexed chicks. Hatcheries in all of the other States reported selling such chicks, varying from 1.4 per cent in Maryland to 71.4 per cent in Utah.

Destroying Cockerel Chicks

Of the 5,824 hatcheries answering the question as to whether or not they destroyed some cockerel chicks there were 403, or 6.9 per cent, replying in the affirmative. Based on these replies, it is estimated that approximately 7 per cent of the hatcheries of the counrty practice from time to time the destruction of some cockerel chicks.

As hatcheries increase in capacity this practice is more widely used. It is a rather common practice in the Pacific Coast area, where 30.5 per cent of the hatcheries reported destroying cockerel chicks. Hatcheries in the Mountain and East North Central regions also utilize the practice to some extent, but in the rest of the country it is used but very little.

As could naturally be expected, this practice is more common in the areas where sex-separated chicks are sold. In 12 states no hatchery reported this practice. Fifty per cent of the hatcheries of Washington reported the destruction of some cockerel chicks.

Solving Problems of Chick Sexing

"Chick sexing is a headache, but it is a necessary evil, here to stay, and we must learn how to use it to the advantage of the producer, the chick purchaser, and the poultry industry," says R. E. Jones in an article published in the New England Homestead.

He goes on to list the outstanding problems confronting the breeder or hatcheryman with suggestions for solving them, as follows:

1. Accuracy of sexing. A check on the ability of sexers could be obtained by licensing all sexers based on an examination for accuracy conducted by an official state agency.

2. Reliability of sexers. Use a standard form of agreement between breeder and sexer specifying the percentage of accuracy guaranteed, number of chicks to be handled, and date and time sexing is to be done.

3. Cash cost for sexing. The accepted charge of one cent per chick could be reduced by organizing chick sexing associations, distributing the load by staggering hatching dates, and hiring sexers on a salary basis.

4. Disposal of cockerel chicks. Seek possible markets for cockerels for cross breeding, broiler and roaster production, and three-week-old capons.

¶ IN FYLDE, Lancashire, England, the most important poultry center in the country, there have been cases of farmers having to kill and burn their livestock after it has been two days without food.

—Eggs, London, England, Jan. 24, 1940.

Too Few Hoppers Make Runts

The majority of poultrymen do not have enough feed hopper space for birds of all ages. I never will forget the advice of a very successful poultrywoman on this point. She said, "I want enough hoppers for them all to eat at once and half a hopper left over."

We have developed a doubledeck hopper for pullets and hens which supplies sufficient hopper space for 160 hens, or about 5½ inches per hen. This is in short sections too, so that "bossy" hens cannot drive the other hens off more than 6 feet of hopper at a time.

There is nothing that will make runts out of otherwise good chicks quicker than insufficient hopper space.

—Herbert A. Hogsett, San Diego Poultry Journal, June 25, 1940.

Wind Puffs in Capons

Wind puffs are always likely to follow caponizing. They are caused by a rupture of the air sacs during caponizing, or the bird may force them through the incision. Wind puffs are less prevalent in birds caponized from one side and if the birds have ample room to exercise.

Small wind puffs will disappear in time so need not be opened. Sometimes the puffs become badly distended and cause severe discomfort, so they should be opened. Remove the scabs of the old incision or make a new cut about an inch long. Permanent relief can be secured by putting a stitch with a double cord string through the skin. This allows the air to escape between the strings and prevents it from accumulating. A bag needle is well suited for this work. The string will fall out of its own accord in a few weeks.

—Excerpt from Penna. State College Circular 182.

JUST when we were quite sure that we knew all the breeds of poultry—even if we couldn't identify half of them if we had to—we were told about the Hornet, an old Yorkshire breed. The Hornets are a light breed, laying good-sized eggs, and are very hardy. They have two horns sticking straight up as combs. The chicks are all brown when hatched, the legs change to blue at about eight weeks, and the color eventually becomes a mixture of gold and black.

—Lorraine L. Engel, U. S. Egg and Poultry Magazine, June 1940.

VIEWS OF THE EDITORS

Fresh Eggs and Trade Barriers

Some states have been very foolish in the types of laws they have proposed affecting eggs. Florida experimented with a rubber stamp on imported eggs, aiming to put outside producers at a disadvantage. The result was they lost the ability to protect their own consumers with adequate quality on home-raised eggs.

One of the Carolinas is now reported as proposing a 5-cent tax on all outside eggs which appears to us to be a stupid attempt to raise consumer prices without any adequate protection for consumer quality. Happily, all the New England states have approached their egg laws from another angle. In no case is there any attempt at geographical discrimination. These local laws are based primarily on setting quality standards for consumer protection. Egg producers in any other states who take the trouble to meet these standards can enjoy both the prices and profit available in the New England market.

All of this merely goes to show that unless so-called protective Legislation really does protect the quality the consumer expects to get, the law has failed in its real social purpose. It becomes either a destructive tax measure or else prejudicial legislation favoring some particular group without consideration for consumer welfare or conventional trade practice. Frankly, I feel that only generic laws which aim to standardize quality by improving its dependable control are really constructive and that's why I don't understand the present proposals to revise the National Egg Grading Law over which some Government officials and market men are fussing.

Fresh egg grades to me involve two or three dimensions and the essence of all is Quality. Any proposal which allows the legal use of the words "Fresh Egg," without maintaining all the safeguards by which the different angles of Egg Quality can be compared, would probably weaken the law and this would mean that a small percentage of unscrupulous dealers could injure their honest fellows in the eyes of the public by abusing the situation and hurting the good name of the trade.

—Leavitt C. Parsons, New England Poultryman, June 15, 1940.

Sell Non-Layers; Keep Others

During the week ending May 25, farmers sold 8 per cent more hens than they did during the corresponding week last year. The next week, 23 per cent more; and this last week, 33 per cent more!

A person always sells at a disadvantage when receipts are heavy, whether he is selling hens or hogs or cattle. Whenever you see other people rushing to market with hens, it's a good time to keep yours.

Systematic culling is good business.

Any time a hen won't lay enough eggs to pay her own way and make a little for you besides, it's time to sell her. When flocks are culled regularly, hens are marketed in an orderly way.

The fact that people are suddenly selling a third more hens than they did last year means they must be selling birds that are still laying—or would be if they were given the proper feed and care.

There should be an abundance of feed. (I've never seen the country looking any better than it does.) And we've reached the time of year when the general trend of the egg market is higher. With good feed, plenty of water, and a clean, comfortable laying house, I can't see any reason why it shouldn't be profitable to keep all the layers you can take care of.

On the other hand, if you sell them, I can see nothing but disappointment—first, in the price you get for them now and second, in the fact that you won't have the eggs to sell on a rising market.

Get the birds that aren't laying out of your flock, by all means, but think twice before you sell any others!

—Frank Priebe's Weekly Letter to Poultry Raisers, Copyrighted, June 15, 1940.

The "Free Rein" System

"No surplus of hatchery chicks was reported during May. Reports from 300 plants showing disposal of chicks indicated that 92 per cent were sold and delivered, four per cent custom-hatched, one per cent destroyed as sexed cockerels and three per cent distributed by other methods, brooded for later sale as 'started' chicks or unsold at the end of the month. These disposals are the same as those at the end of the corresponding month last year."

The above is from the May, 1940, hatchery report of the Agricultural Marketing Service. On the surface, it reveals the simple fact that hatcheries sold practically all of the May output and had only a 3 per cent surplus on hand June 1. Underneath, it tells a story of an unhampered industry which, confronted by an only fair season, let the old economic law of supply and demand prevail. Hatcherymen, forseeing a somewhat smaller season this year than last, voluntarily reduced their sets, so as not to create a catastrophic condition in the industry.

—Poultry Supply Dealer, July, 1940.

A Little Chick Shall Lead Them

One of the most remarkable and interesting phases of animal nutrition is the fact that it so often leads human nutrition to new discoveries and new roads to health.

This has never been more evident than recently when flour mills started to fortify flour with vitamins, and other food processors began to look for more ways to make their products rich in the ABC's of vitamin strength. However new this may seem to bread and spinach eaters, it is old stuff to chicks and cows, who have had vitamins, proteins, fats and minerals carefully measured for many years.

Possibly the most outstanding example of the leadership of animal nutrition was shown recently when the value of green grass for human beings was extolled in medical journals and national magazines. The Kansas City company which developed this grass for human consumption has used these grasses for livestock for more than three years, so many a pullet has been way ahead of the hand that feeds her when it comes to latest nutritional ideas.

Just why we should be so much more particular and scientific about the feed we give our livestock than the food we give ourselves is not immediately clear, but it may be the old ornery trait in human beings which causes them to eat and drink what they like rather than what is best.

Perhaps one needs to go no farther than his own home to find out why human nutrition lags. A child gets his cod liver oil, vitamin pills and quart of milk. As soon as he gets old enough to assert himself, his whims have more to do with his diet than doctor's orders. When he gets to be 45 he goes to his doctor for repairs, and not, ordinarily, for nutritional advice.

But the pig and the chick and the other feed eaters never can assert themselves. So they eat what is given them and, according to evidence, are better off.

—Feedstuffs, June 15, 1940.

❝ REALIZING that a wider market was needed for the growing broiler industry, the Rogers (Arkansas) Chamber of Commerce, in cooperation with the poultry farmers, sponsored a Live Broiler Show the first week of January, 1939. This is the first broiler show ever held in the United States—or in the world, so far as known. The show was open to other states, and around 1,000 choice broilers were exhibited. $2,000 in cash prizes were awarded for the best exhibits. The show came to a close with a broiler banquet and later an auction sale of the live broilers. This show drew more than 14,000 visitors from many states.

—Bertha M. Snelling, American Poultry Journal, May, 1940.

❝ THE University of Maryland has a Rhode Island Red hen—"Maisie" she is called—that attained the ripe old age of 10 years on April 7, 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	May 1	June 1	May 1	June 1	Aggregate Jan.-June	May 1	June 1	Aggregate Jan.-June
North Atl.									
1929-38 (Av.)	96.9	85.9	82.4	59.4	54.8	271	51.0	45.1	242
1939	98.4	84.2	80.5	60.0	55.7	293	50.2	42.5	258
1940	97.2	84.2	80.2	59.1	57.0	288	49.6	45.9	254
E. N. Cent.									
1929-38 (Av.)	108.8	96.4	90.3	58.5	52.8	248	56.6	47.9	248
1939	107.3	93.2	87.9	59.2	54.8	270	55.2	48.3	266
1940	110.8	97.3	91.3	58.4	55.8	262	56.9	51.0	266
W. N. Cent.									
1929-38 (Av.)	118.8	106.8	99.8	56.2	50.6	228	59.9	50.4	250
1939	113.1	102.6	95.1	58.7	53.2	253	60.2	50.6	266
1940	118.6	109.5	102.4	58.7	54.0	242	64.2	55.2	271
South Atl.									
1929-38 (Av.)	58.9	50.4	48.2	51.5	46.0	241	25.5	21.9	128
1939	59.9	49.4	48.1	53.8	49.0	264	26.2	23.2	139
1940	59.9	53.3	51.4	52.8	49.2	253	27.7	24.8	140
South Cent.									
1929-38 (Av.)	65.0	54.4	51.4	51.6	45.3	235	28.0	23.2	137
1939	63.6	55.2	52.9	53.9	47.8	254	29.6	25.3	148
1940	65.8	56.5	52.4	53.0	47.7	235	29.8	24.9	138
Western									
1929-38 (Av.)	73.2	66.4	63.5	59.1	54.4	268	39.3	34.8	181
1939	72.6	62.9	60.3	58.9	53.6	280	37.4	32.6	184
1940	73.7	64.4	62.4	59.1	54.2	283	38.1	33.8	187
United States									
1929-38 (Av.)	84.5	73.9	69.7	56.0	50.4	243	41.0	31.8	186
1939	82.8	72.2	68.5	57.6	52.4	264	41.1	35.3	199
1940	85.1	75.3	70.9	57.1	53.0	255	42.5	37.1	197

Farm production of eggs during May exceeded the 10-year (1929-38) average by 2.4 per cent and the 5-year (1934-38) average by 6.6 per cent. Although the average number of layers during the first 5 months of this year was about 4 per cent larger than during the same period in 1939, the number of eggs produced per layer on hand was about 4 per cent smaller.

Farm flocks during May carried an average of 288,750,000 layers which is about 5 per cent more than in May last year and the 5-year average, but less than 1 per cent above the 10-year average. The seasonal decline in average number of layers on hand during January to average numbers during May was about 13 per cent compared with 14 per cent both in 1939 and for the 10-year average.

The culling of hens during May was somewhat greater than during May last year, making up for lighter cullings during April so that the number of layers on June 1 shows a smaller increase over last year than at the beginning of last month. Since January 1 flocks have ranged from about 2 to 4 per cent larger than last year, the spread fluctuating from month to month in response to the more or less favorable relation of poultry and egg prices to cost of feed, and to other seasonal influences.

Egg production per layer in sample farm flocks on June 1 was greater by 1 per cent than the rate on June 1 last year, and is the highest average production per layer in the 16-year record for flocks belonging to Crop Reporters. This is, however, the first report since January 1 in which last year's rate of production per hen has been exceeded.

The exceptionally high rate of production on June 1 this year may be ascribed in part to the unusually late season which has delayed the normal advancement of vegetative growth by from 1 to 3 weeks over most of the country. This delay in vegetative development has tended to delay also the normal seasonal trend of egg production. Following the severe weather of January, egg production per hen lagged behind last year's rate from month to month and the peak point of production for the United States as a whole did not occur this year until almost the close of April, probably about a week later than usual. The subsequent seasonal decline was therefore less than usual, and the June 1 level of production per hen probably stood at the point on the seasonal production curve which it would ordinarily have touched about a week earlier.

With gains both in number of layers on hand and in rate of lay per hen on June 1, total egg production per sample flock on that date was 5.1 per cent greater than last year and 6.6 per cent greater than the 10-year June 1 average. Compared with last year, gains are shown for all major geographic areas except the South Central States. Compared with the 10-year June 1 average, production per hen was greater in all areas except the Far West.

—Comment from U.S.D.A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

June egg markets were characterized by unusually heavy Government buying on the part of the Federal Surplus Commodities Corporation, the Agricultural Marketing Service reports. During the three weeks ending June 22, purchases totaled 708,000 cases, compared with 661,000 cases the previous month. Without this buying support, egg prices would likely have been much lower.

New York and Chicago prices of average quality eggs have been main-

Receipts of Eggs (Cases) at 4 Markets*

Geographic Section	May 1940	May 1939	May % change	Jan. to May, Inc. 1940	Jan. to May, Inc. 1939	Jan. to May, Inc. % change
New England	43,265	35,496	+21.9	239,394	186,691	+ 28.2
Middle Atlantic	269,521	249,517	+ 8.0	1,090,503	1,008,607	+ 8.1
South Atlantic	43,638	39,098	+11.6	160,487	172,388	– 6.9
East North Central	512,968	477,350	+ 7.5	1,715,160	1,652,096	+ 3.8
West North Central	1,345,490	1,368,794	– 1.7	4,205,774	4,345,389	– 3.2
South Central	8,228	6,206	+32.6	65,385	50,957	+ 28.3
Mountain	36,722	36,738	– 0.04	194,384	131,182	+ 48.2
Pacific	32,352	17,248	+87.6	235,051	110,815	+112.1
Miscellaneous	540	655	–17.6	2,331	2,750	– 15.2
TOTAL	2,292,724	2,231,102	+ 2.8	7,908,469	7,660,875	+ 3.2

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic Section	May 1940	May 1939	May % change	Jan. to May, Inc. 1940	Jan. to May, Inc. 1939	Jan. to May, Inc. % change
New England	1,886,396	1,761,309	+ 7.1	4,020,953	3,830,118	+ 5.0
Middle Atlantic	5,338,274	5,323,218	+ 0.3	13,995,068	10,669,023	+ 31.2
South Atlantic	1,721,331	1,921,474	–10.4	10,711,864	6,998,732	+ 53.1
East North Central	2,456,620	2,660,874	– 7.7	15,232,781	14,839,209	+ 2.7
West North Central	10,053,987	8,072,382	+24.5	54,439,151	42,416,352	+ 28.3
South Central	2,337,832	2,470,105	– 5.4	9,015,111	10,106,731	– 10.8
Mountain	271,375	209,551	+29.5	2,685,677	1,775,961	+ 51.2
Pacific	1,083,930	1,718,128	–36.9	8,739,503	4,362,333	+100.3
Miscellaneous	71,000	0	–	71,000	0	–
TOTAL	25,220,745	24,137,041	+ 4.5	118,911,108	94,998,459**	+ 25.2

* New York, Chicago, Philadelphia, and Boston ** Revised.

tained at about ½-cent over comparable periods of last year. Marketings of eggs have been unusually heavy. Terminal market receipts in May were only about 3 per cent larger than a year earlier, but the increase in June was almost 10 per cent. Over 20 per cent of the month's receipts at New York and Chicago up to June 22 were bought by the Federal Surplus Commodities Corporation.

Increased supplies at terminal markets have followed heavier marketings at country packing plants in various parts of the country, indicating increased production. This is confirmed by the June crop report, which indicated a May production 5 per cent larger than in 1939, and 7 per cent larger than the 5-year May average. Since early in May, packing plant receipts have been showing decreases each succeeding week, which is the usual seasonal trend, though the continued relatively high feed-egg ratio is another possible condition bearing upon the change in current trend.

—Comment from U.S.D.A. Monthly Egg and Poultry Market Review.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
June 8	30	34,946	–3.68	+12.79
June 15	27	30,081	–4.84	+20.27
June 22	29	29,530	–5.36	+17.66
June 29				

—Compiled from U.S.D.A. Market Reports.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1940	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1940	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1940	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) % Chg.
June 8	211,440	178,582	+18.40	4,205	3,185	+32.03	Not available			3,331	2,488	+33.86
June 15	184,634	158,000	+16.86	4,027	3,168	+27.10	578	461	+25.41	3,106	2,403	+28.28
June 22	171,642	138,638	+23.18	3,876	2,920	+32.71	739	564	+30.99	2,871	2,150	+33.53
June 29	149,622	128,899	+16.08	3,781	2,913	+29.78	810	818	– 0.90	2,741	1,909	+43.57

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
June 8	61	70,076	62,574	–4.54	+11.99
June 15	61	67,007	59,937	–4.38	+11.79
June 22	61	63,846	57,307	–4.92	+11.41
June 29	61	61,353	56,163	–3.76	+ 9.24

—Compiled from U.S.D.A. Market Reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1939	1938
June 7	10.8	9.9	7.4	.175	.18	.226	1.89	1.79	1.69
June 14	10.6	9.6	7.6	.178	.182	.223	1.88	1.75	1.71
June 21	10.9	9.4	7.4	.178	.184	.232	1.94	1.73	1.72
June 28	10.5	8.8	7.2	.178	.195	.236	1.86	1.72	1.72

—Compiled by N. Y. State Dept. of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-Yr. Avg. 1929-38	1940	1939	1940	1939
June 7	7.82	7.14	6.76	.158	.151	1.23	1.08
June 14	7.78	6.90	6.66	.158	.153	1.23	1.05
June 21	7.74	6.78	6.66	.158	.153	1.22	1.03
June 28	7.57	6.71	6.76	.158	.153	1.19	1.02

—Compiled from U.S.D.A. Market Reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1940	1939	1938	1937	1936	1935
May	10.18	8.64	8.07	11.02	8.11	7.67
January-May	9.77	7.59	8.25	9.90	7.61	7.67
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

The coming of warmer weather has had the usual effect upon egg quality, resulting in some tendency for the difference between prices of better qualities and average grades to widen. Early in the month the Federal Surplus Commodities Corporation lowered their offering prices ½ to ¾ cents on Mixed Color Firsts at New York. This apparently was not intended to reflect any change of feeling regarding the fundamentals of the situation, but rather took into account certain increased tolerances under commercial grading. Prevailing prices on this grade at New York have been 16¾ cents in carlots, with less-than-carlots ¼ cent lower. In June 1939, this same grade of Mixed Color Firsts averaged 16 cents. Nearby Specials at New York will average ½ cent lower this month than in May, and lower than a year ago by about 2½ cents. Pacific Coast eggs at New York are also lower than a year ago. Chicago wholesale prices are ½ cent lower than a month ago, but are slightly higher than a year ago. Pacific Coast markets have advanced a full cent since June 1, and U. S. Extras are now 19 cents at San Francisco. This is 2½ cents below the average of June 1939.

Purchases of the Federal Surplus Commodities Corporation from June 1 to June 22 totaling 708,086 cases were distributed as follows: On the New York Mercantile Exchange, 144,362 cases, and on the Chicago Mercantile Exchange, 89,919 cases. On offers: Northeastern States, 70,893 cases; Midwestern States, 397,112 cases; Southwestern States, 4,400 cases, Pacific Coast States, 1,400 cases. These June purchases bring the total quantities acquired since the current buying program began in December to approximately 2 million cases. All Federal Surplus Commodities Corporation purchases are for relief distribution, although recently there has been a tendency for stocks belonging to the Federal Surplus Commodities Corporation proper, or State relief agencies, to accumulate in cold storage. These storage stocks however, are definitely earmarked for relief outlets, an important segment of which is said to be for school and playground lunches.

—Comment from U.S.D.A. Monthly Egg and Poultry Market Review.

1940 Egg Prices at New York City

Kind	June 7	June 14	June 21	June 28	June 28, '39
Mixed Color Firsts	17¼	17¼	17¼	17¼	15¾-16
Nearby and Midwestern White Premium Marks	19½-21	19½-21	19½-21	20½-22	23½-25
Nearby and Midwestern White Specials	19	19	19	19½-20	23
Pacific Coast Specials	25-26½	25-26½	25½-26½	26½-27	27¾-28½
Nearby and Western Brown Exchange Specials	19	19	19	19½	21

Farm Prices of Eggs per Dozen

(Figures given in cents)

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
Average 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	23.2	30.1
1938	21.6	16.4	16.2	15.9	17.6	18.2	19.9	24.9	29.0
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	20.6	25.8
1940	18.3	20.2	15.4	15.0	15.1	14.4			

Eggs in Storage

Storage Holdings of Eggs

Kind	June 1 5-Year Avg. 1935-39	June 1 1939	May 1 1940	June 1 1940	% Change June '39-June '40
		(Thousands)			
Shell Eggs (cases)	6,071	5,880	3,341	‖5,971	+1.5
Frozen Eggs (lbs.)	112,120	117,900	79,454	123,720	+4.9
Frozen Case Equivalent (cases)*	3,203	3,369	2,270	3,535	+4.9
Total (cases)	9,274	9,249	5,611	9,506	+2.7

*Frozen eggs are converted on the basis of 35 lbs. to the case.
‖Includes 318,000 cases owned by FSCC for relief distribution.

Weekly cold storage reports for the 35 markets, which on June 1 held close to 75 per cent of total U. S. stocks of eggs, indicate that U. S. stocks on July 1 will exceed those of a year earlier by a sizable margin. Making allowance for Government-owned and relief agency stocks, which in the 35 cities alone on June 22 totaled 831,000 cases, commercially owned stocks will be less on July 1 than on that date in 1939. The into-storage movement of shell eggs since June 1 has been 30 per cent heavier than in 1939, and the rate of movement on frozen eggs has been 45 per cent greater. By way of comparison, stocks of shell eggs in the 35 cities on June 22 this year were 5,491,000 cases, and for the corresponding period of 1939 they were 5,187,000 cases. Frozen egg stocks on the above date were 95 million pounds, compared with 88½ million pounds a year earlier. On a case equivalent basis, combined stocks of shell and frozen eggs were 8,207,000 cases this year, compared with 7,713,000 cases last year. The production of liquid eggs in May was 21 per cent greater than during that month last year, with about 90 per cent of the current output going into storage.

—Comment from U.S.D.A. Monthly Egg and Poultry Market Review.

Poultry Meat Prices

Farm Prices of Chickens per Pound

(Figures given in cents)

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Sept. 15	Nov. 15
Average 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	15.2	14.1
1938	16.7	16.0	15.9	16.2	16.1	15.7	15.0	14.3	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.6	12.4
1940	12.0	12.2	12.8	12.9	13.6	13.3			

U. S. D. A. Egg & Poultry Markets Review.

The poultry market has been more or less dull during the month and prices generally have worked to a lower level. At New York, fowl prices dropped from a level of 18-20 cents early in the month, to around 17 cents. Best quality broilers which early in the month were reported at 24-25 cents, are down 2 to 3 cents. Heavy hens at Chicago have declined ½ cent, spring chickens 1 cent, and broilers 3 cents. The reports of weekly receipts of live poultry at Central Western primary markets during June indicate increases over last year of about 25 per cent. Receipts of young stock, reported separately the first time this season during the week which ended June 15, were 29 per cent heavier than a year ago. Of interest in connection with prospective supplies of poultry are commercial hatchery developments this year. The monthly report for May shows calendar year (January-May, inclusive) decreases of 10 per cent in eggs set, and 14 per cent in salable chicks hatched.

—Comment from U.S.D.A. Monthly Egg and Poultry Market Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	June 1 5-Year Avg. 1935-39	June 1 1939	May 1 1940	June 1 1940	% Change June '39-June '40
Broilers	5,664	6,241	4,519	3,679	– 40.3
Fryers	4,204	4,892	3,135	2,164	– 55.7
Roasters	10,178	11,398	9,950	6,213	– 45.4
Fowls	8,800	11,983	12,391	11,802	– 1.5
Turkeys	16,417	17,414	43,723	40,205	+130.8
Ducks	2,117	1,998	972	2,253	+ 12.7
Miscellaneous	10,898	12,870	7,768	8,521	– 33.7
Unclassified			3,768	2,098	
Total	58,278	66,796	86,226	76,935	+ 15.1

Receipts of dressed poultry at terminal markets up to May 1 were unusually heavy this year in relation to last, but the increases dropped from 22 per cent in April, to 4.5 per cent in May. The June increase will be still less. Total receipts since January 1 to date are about 20 per cent greater than during the corresponding period of 1939.

Statistics covering the storage movement of frozen poultry during June show that in the past there have been both increases and decreases that month. Therefore, an increase this year is not unusual. It appears significant, however, that this year's increase is considerably greater than that of other recent years when the change has been in this direction, and it is not unlikely that July 1 stocks will be at a new record high for that date.

—Comment from U.S.D.A. Monthly Egg and Poultry Market Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During May			Salable Chicks Hatched During May			Chicks booked June 1 for June or later delivery			
		1940	1939	% chg.	1940	1939	% chg.	No of Plants	1940	1939	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	14	1,098	1,152	– 5	914	1,140	–20	11	1,076	813	+32
Mid. Atl.	33	1,049	1,227	–15	1,344	1,431	– 6	24	158	155	+ 2
S. Atl.	32	1,501	1,350	+11	1,360	1,213	+12	14	684	442	+55
E. N. Cent.	103	5,137	5,141	– 1	5,309	5,476	– 3	73	664	502	+32
W. N. Cent.	89	7,716	8,189	– 6	7,997	9,625	–17	62	947	1,098	–14
S. Cent.	32	543	560	– 3	851	846	+ 1	11	103	83	+24
Mountain	21	964	1,002	– 4	946	1,079	–12	12	248	178	+39
Pacific	41	890	1,360	–35	1,128	2,018	–44	29	654	696	– 6
U. S.	365	18,898	19,981	– 5	19,849	22,828	–13	236	4,534	3,967	+14
Jan.-May . Inc.		123,767	137,662	–10	78,265	90,835	–11		59,806	70,886	–16

Young chickens in farm flocks on June 1 show a decrease of almost 12 per cent below numbers on hand a year ago. On May 1, numbers were 18 per cent lower and on April 1 they were 26 per cent lower than last year's numbers. Numbers of young chickens were the smallest for June 1 since 1937, and with the exception of that year, they were the smallest since the beginning of record in 1927.

Three hundred and sixty-five plants with a combined capacity of around 43,570,000 eggs reported 19,849,000 chicks hatched in May this year as against 22,828,000 chicks hatched in May last year. This is a decrease of 13 per cent. These same plants reported 18,898,000 eggs set this year compared with 19,981,000 set a year earlier—a decrease of 5 per cent.

Production of hatchery chicks for the first 5 months of 1940 was apparently 14 per cent smaller than that of the corresponding 5 months of last year. Hatcheries reporting to the Service during these months show a cumulative production through May of 78,265,000 chicks compared with 90,835,000 chicks a year earlier.

No surplus of hatchery chicks was reported during May. Reports from 300 plants showing disposal of chicks indicated that 92 per cent were sold and delivered, 4 per cent custom hatched, 1 per cent destroyed as sexed cockerels and 3 per cent distributed by other methods, brooded for later sale as "started" chicks or unsold at the end of the month. These disposals are the same as those of the corresponding month last year.

The decline in the number of chicks sexed in May compared with a year earlier was not quite as pronounced as the decrease in the total number hatched. Reports from 137 plants indicated that the number of chicks sexed was 23 per cent less than the number sexed last year. The number sexed this year constituted 31 per cent of the total May production of the reporting plants compared with 28 per cent last year.

There was an increase in the demand for May chicks from producers of poultry meat. Sixty-three per cent of the total number of chicks hatched this year were of the heavy breeds compared with 59 per cent a year ago.

Reports from 106 hatcheries showed 31 per cent fewer turkey eggs set and 21 per cent fewer poults hatched during May compared with a year ago. Advance orders were reported by 54 plants to have been 41 per cent under those of the same date last year. For the months of January to May, inclusive, hatcheries this year have reported a combined production of 2,711,000 poults compared with a production of 3,239,000 poults last year. This is a decrease of 16 per cent. Turkey producers in reporting to the Agricultural Marketing Service in February on the number of turkeys they expected to raise this year, stressed the fact that they would buy fewer hatchery poults but that they would produce more poults at home.

—Comment from U.S.D.A. Hatchery Report.

Poultry Canning Operations

Poultry Canning Operations During May, 1940

Commodity	Quantities reported to date for May 1940	Quantities reported for April 1940	Same Firm Comparison		
			May 1940	May 1939	% change in 1940
	Pounds	Pounds	Pounds		Per cent
Dressed poultry canned or used in canning	4,885,992	5,147,556	4,885,992	2,858,264	+71
Number of firms reporting	18	19	18		

Egg Breaking Operations

Egg Breaking Operations During May, 1940

Commodity		Quantities reported to date for May 1940	Same Firm Comparison		
			May 1940	May 1939	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		10,296,456	10,295,656	6,561,451	+57
Mixed eggs (plain)		1,069,665	1,069,665	1,088,950	− 2
Mixed eggs (emulsions, also with sugar, salt, etc.)		5,110,138	5,110,138	4,076,647	+25
Egg whites (all descriptions)		11,827,349	11,827,349	9,749,331	+21
Egg yolks packed	Without salt, sugar, etc.	2,222,743	2,222,743	2,790,331	−20
	With sugar	5,090,369	5,090,369	3,689,336	+38
	With salt	3,550,985	3,550,985	1,897,726	+87
	All yolk emulsions, including glycerine	0	0	0	
Total—pounds		39,167,705	39,166,905	29,853,772	+31
Total—case egg equivalent		1,119,077	1,119,054	852,965	
Number of firms reporting		41	40	40	

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		May		Jan. to May, Inc.	
		1940	1939	1940	1939
Eggs in shell	(doz.)	796,056	141,358	2,399,947	1,057,568
Eggs and Yolks, frozen, dried or canned	(lbs.)	16,602	Not available	83,641	Not available
Live Poultry	(lbs.)	14,921	30,457	65,687	102,421
Dressed Poultry	(lbs.)	146,615	168,152	542,256	795,445

Imports of Eggs and Poultry

Commodity		May 1940	May 1939	Jan. to May, Inc. 1940	Jan. to May, Inc. 1939
Eggs in shell	(doz.)	22,276	26,200	90,587	149,424
Whole Eggs, dried	(lbs.)	0	5,000	28,250	32,000
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	195,400	1,000	642,476	44,525
Yolks, frozen	(lbs.)	0	14,100	0	25,330
Egg Albumen, dried	(lbs.)	21,000	29,800	132,400	279,983
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	149,362	75,636	372,854	305,498
Dressed Poultry	(lbs.)	70,890	18,447	132,425	110,369
Poultry, prepared	(lbs.)	14,998	167,438	206,901	521,655

¶ ENGLISH poultry raisers, according to a dispatch to the New York Times on June 3, have been ordered by their government to reduce their flocks to one-third because of the shortage in feedstuffs.

¶ AT PITTSBURGH, PA., a woman, separated from her husband for 26 years, won a divorce after telling the judge the following story: "Every night when I came home from work, I'd miss one or two chickens. Finally, I found out he was taking them to a saloon and getting drinks for them."

RESULTS OF LAYING TESTS

J. A. Hanson's White Leghorns at Storrs continue to lead all other opponents in the 16 standard tests after 35 weeks of the present test year. These birds have an advantage of 264 eggs and 175 points over their closest rival.

E. B. Parmenter's Rhode Island Reds at Rhode Island are runners up for top honors and lead all other pens in their breed. Best pen to June 1 in the Barred Rock class is Norman W. Amidon's entry at Pennsylvania. Eben Wood's high-stepping layers at Storrs hold number one position in the New Hampshire section. Harvey E. Taylor's White Wyandottes lead all others in their breed. In the White Rock class, Riley Poultry Farm's Oklahoma team has earned the blue ribbon.

Parmenter's Red hen at Rhode Island has the largest number of points to date, 256.9, but J. A. Hanson's White Leghorn at Storrs has 255.7 points and has 240 eggs, five more than the Red hen, to her credit. She has missed only four days in the 244 days to June 1.

Content Farms' Leghorns at Central New York shelled out 373 eggs and earned 401.8 points to top all other pens for May.

C. A. Kaiser's Leghorns lead all other pens in the Illinois non-standard test. Parmenter's Reds are on top at the R. O. P. Progeny Test, Paterson, N. J. Schwegler's Leghorns occupy first place in the two-year class for the year and for the 20 months to June 1 at Pennsylvania Hen Test.

Twenty Highest Pens in All Breeds to June 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2785	2914.45	Storrs
E. B. Parmenter	Rhode Island Red	2521	2739.75	Rhode Island
J. A. Hanson	White Leghorn	2594	2734.85	Storrs
H. J. Hardin	Rhode Island Red	2566	2715.15	Georgia
Thomas Mettler	Rhode Island Red	2559	2667.55	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	2576	2659.00	Pennsylvania
R. W. Anderson	Rhode Island Red	2521	2653.05	Storrs
To-Lani Farm	Rhode Island Red	2648	2645.50	Georgia
Horseshoe Poultry Ranch	White Leghorn	2586	2640.10	Texas
W. L. Gilbert Home	White Leghorn	2495	2635.10	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	2461	2633.10	Passaic, N. J.
Erath Egg Farm	White Leghorn	2482	2624.50	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	2576	2618.20	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	2483	2605.50	Western New York
George M. Heberer	White Leghorn	2514	2605.00	Texas
Eben Wood	New Hampshire	2396	2599.85	Storrs
R. C. Cobb	Barred Rock	2513	2592.95	Storrs
W. C. Mullins	Rhode Island Red	2461	2589.70	Texas
R. E. & F. H. Kendrick	Rhode Island Red	2403	2585.10	Rhode Island
E. B. Parmenter	Rhode Island Red	2403	2581.25	New York State

High Pen in Each Standard Test to June 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2785	2914.45	Storrs
E. B. Parmenter	Rhode Island Red	2521	2739.75	Rhode Island
H. J. Hardin	Rhode Island Red	2566	2715.15	Georgia
Thomas Mettler	Rhode Island Red	2559	2667.55	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	2576	2659.00	Pennsylvania
Horseshoe Poultry Ranch	White Leghorn	2586	2640.10	Texas
Alampi Poultry Breed. Farm	Rhode Island Red	2461	2633.10	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	2483	2605.50	Western New York
E. B. Parmenter	Rhode Island Red	2403	2581.25	New York State
Ford's Riverbank Farm	Rhode Island Red	2413	2495.90	Maine
J. J. Warren	Rhode Island Red	2348	2468.10	Michigan
Pinebreeze Farm	White Leghorn	2362	2465.80	Florida
Robert Chapman	Rhode Island Red	2332	2434.45	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	2260	2407.30	Missouri
A. E. Danish	White Leghorn	2251	2327.70	Central New York
W. A. Seldel	White Leghorn	2132	2228.45	Arizona

High Pen in Each Standard Test for May

Owner	Breed	Eggs	Points	Test
Content Farms	White Leghorn	373	401.80	Central New York
J. A. Hanson	White Leghorn	356	387.85	Storrs
J. A. Hanson	White Leghorn	356	383.20	Western New York
Aseltine Poultry Farm	White Leghorn	346	377.45	Michigan
Erath Egg Farm	White Leghorn	347	373.40	Texas
Glendale Poultry Farm	Rhode Island Red	328	358.90	Rhode Island
Alampi Poultry Breed. Farm	Rhode Island Red	329	358.00	Passaic, N. J.
H. J. Hardin	Rhode Island Red	328	354.85	Georgia
Ford's Riverbank Farm	Rhode I sland Red	332	351.55	Maine
R. O. Wagemaker	Rhode Island Red	340	344.55	New York State
W. S. Hannah & Sons	White Leghorn	313	339.60	Missouri
Lindstrom Poultry Farm	White Leghorn	319	338.60	Oklahoma
George A. Pearce	White Leghorn	313	337.80	Hunterdon, N. J.
Lone Oak Leghorn Farm	White Leghorn	320	336.45	Florida
Guy A. Leader	White Leghorn	301	324.05	Pennsylvania
P. S. Dickey	White Leghorn	314	314.15	Arizona

High Pen in Each Breed to June 1—(244 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	2785	2914.45	Storrs
E. B. Parmenter	Rhode Island Red	2521	2739.75	Rhode Island
Norman W. Amidon	Barred Rock	2576	2659.00	Pennsylvania
Eben Wood	New Hampshire	2396	2599.85	Storrs
Harvey E. Taylor	White Wyandotte	2341	2345.85	Texas
Riley Poultry Farm	White Rock	2266	2343.45	Oklahoma
R. S. Thomas	Ancona	2108	2080.85	Pennsylvania
E. J. Covey	Black Minorca	1858	1923.40	Texas
Laclede Hatchery	Black Australorp	1921	1888.60	Oklahoma
Raymond Murphy	White Giant	1600	1692.00	Missouri
Lindstrom Poultry Farm	Buff Minorca	1774	1691.80	Texas
T. D. Brown	White Minorca	1610	1677.55	Texas
Harry L. Phillips	Columbian Rock	1461	1557.95	Missouri
Famous Poultry Farms	Leghorn Cross	1429	1423.00	Georgia
Iowa Master Breeders	Buff Orpington	1280	1355.25	Missouri
Cedarlaid Poultry Farm	Brown Leghorn	1526	1328.00	Florida
Charles C. Ward	Buff Leghorn	1332	1319.15	Oklahoma
S. E. Raymond	Lamona	1170	1234.10	Storrs
R. L. Jones	Light Brahma	915	970.45	Hunterdon, N. J.
Walter Dobe	Barnevelder	785	838.20	Western New York
Daniel S. Riker	Buff Rock	369	336.95	Maine

High Hen in Each Breed to June 1–(244 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	235	256.90	Rhode Island
J. A. Hanson	White Leghorn	240	255.70	Storrs
George A. Pearce	New Hampshire	226	241.50	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	227	235.90	Pennsylvania
Kalerok Farm	White Rock	212	231.10	Maine
T. D. Brown	White Minorca	208	227.00	Texas
Harvey E. Taylor	White Wyandotte	208	224.60	Texas
Ben G. Monroe	Ancona	195	198.15	Georgia
Famous Poultry Farms	Leghorn Cross	194	197.45	Georgia
E. J. Covey	Black Minorca	177	192.20	Texas
Norman Stansfield	Black Australorp	171	185.90	Rhode Island
Raymond Murphy	White Giant	178	180.40	Missouri
Iowa Master Breeders	Buff Orpington	168	178.30	Missouri
Harry L. Phillips	Columbian Rock	157	169.90	Missouri
R. L. Jones	Light Brahma	155	165.05	Hunterdon, N. J.
Henry F. Waitt	Buff Minorca	150	160.85	Maine
S. E. Raymond	Lamona	148	155.90	Storrs
Charles C. Ward	Buff Leghorn	148	146.85	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	158	136.80	Florida
Walter Dobe	Barnevelder	104	114.35	Western New York
Daniel S. Riker	Buff Rock	85	89.50	Maine

High Hen in Each Standard Test to June 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	235	256.90	Rhode Island
J. A. Hanson	White Leghorn	240	255.70	Storrs
W. A. Seidel	White Leghorn	237	249.80	Texas
E. B. Parmenter	Rhode Island Red	227	249.55	Passaic, N. J.
Booth Farms and Hatchery	White Leghorn	233	249.30	Georgia
Booth Farms and Hatchery	White Leghorn	229	246.65	Florida
Thomas Mettler	Rhode Island Red	229	244.25	Hunterdon, N. J.
J. O. Coombs & Son	White Leghorn	225	243.10	Oklahoma
H. Guy Loose	White Leghorn	221	242.00	Pennsylvania
Ford's Riverbank Farm	Rhode Island Red	222	241.95	Maine
Missouri Valley Hatchery	Rhode Island Red	217	238.50	Missouri
J. A. Hanson	White Leghorn	225	234.45	Western New York
Crooks Farm	Rhode Island Red	240	233.55	Michigan
Nelson Leghorn Breed. Farm	White Leghorn	218	232.40	Arizona
J. J. Warren	Rhode Island Red	211	229.90	New York State
Holser's Valley Farm	White Leghorn	209	222.90	Central New York

High Hen in Each Standard Test for May

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	31	34.10	Western New York
Kauder's Pedigreed Leghorns	White Leghorn	31	34.10	Central New York
Eben Wood	New Hampshire	31	34.10	Rhode Island
Oak Knoll Poultry Farm	White Leghorn	31	34.10	Missouri
Erath Egg Farm	White Leghorn	31	34.10	Texas
J. O. Coombs & Son	White Leghorn	31	34.10	Oklahoma
P. J. Osborne	White Leghorn	31	34.10	Maine
Donald I. Goodenough	Rhode Island Red	31	34.05	Storrs
E. C. Eckard	White Leghorn	31	34.05	Michigan
Booth Farms & Hatchery	White Leghorn	31	34.05	Florida
Cane Poultry Farm	Rhode Island Red	31	34.00	Hunterdon, N. J.
T. H. Mettler	Rhode Island Red	31	33.95	New York State
George A. Pearce	Rhode Island Red	30	33.00	Passaic, N. J.
H. Guy Loose	White Leghorn	30	32.95	Pennsylvania
W. A. Seidel	White Leghorn	30	32.95	Georgia
W. A. Seidel	White Leghorn	29	31.60	Arizona

Twenty Highest White Leghorn Pens in Country to June 1

Owner	Eggs	Points	Test
J. A. Hanson	2785	2914.45	Storrs
J. A. Hanson	2594	2734.85	Storrs
Horseshoe Poultry Ranch	2586	2640.10	Texas
Wm. L. Gilbert Home	2495	2635.10	Storrs
Erath Egg Farm	2482	2624.50	Texas
George M. Heberer	2514	2605.00	Texas
Guy A. Leader	2471	2574.75	Storrs
George M. Heberer	2432	2569.20	Texas
C. O. Davis	2421	2561.75	Texas
George A. Pearce	2433	2548.70	Hunterdon, N. J.
Erath Egg Farm	2461	2530.65	Texas
Sand Springs Home Farm	2519	2520.10	Texas
Foreman Poultry Farm	2466	2518.25	Texas
Kauder's Pedigreed Leghorns	2372	2510.50	Storrs
J. A. Hanson	2451	2499.10	Passaic, N. J.
Alfred MacMillan	2339	2496.75	Texas
A. E. Guinn	2481	2495.15	Georgia
Piho Brothers	2369	2485.00	Storrs
Rochelle Egg Farm	2488	2474.20	Texas
W. E. Pyles and Son	2350	2473.35	Georgia

Twenty Highest Rhode Island Red Pens in Country to June 1

Owner	Eggs	Points	Test
E. B. Parmenter	2521	2739.75	Rhode Island
H. J. Hardin	2566	2715.15	Georgia
Thomas Mettler	2559	2667.55	Hunterdon, N. J.
Ralph W. Anderson	2521	2653.05	Storrs
To-Lani Farm	2648	2645.50	Georgia
Alampi Poultry Breeding Farm	2461	2633.10	Passaic, N. J.
Alampi Poultry Breeding Farm	2576	2618.20	Passaic, N. J.
E. B. Parmenter	2483	2605.50	Western New York
W. C. Mullins	2461	2589.70	Texas
R. E. & F. H. Kendrick	2403	2585.10	Rhode Island
E. B. Parmenter	2403	2581.25	New York State
J. J. Warren	2450	2566.25	Storrs
W. C. Mullins	2396	2554.55	Texas
E. B. Parmenter	2395	2545.15	Storrs
Thomas Mettler	2432	2538.65	Passaic, N. J.
W. H. Wilson	2599	2537.80	Georgia
J. J. Warren	2384	2521.40	Texas
Crooks Farm	2380	2516.70	Storrs
Walter H. Rogler	2381	2510.75	Storrs
Ford's Riverbank Farm	2413	2495.90	Maine

Twenty Highest New Hampshire Pens in Country to June 1

Owner	Eggs	Points	Test
Eben Wood	2396	2599.85	Storrs
Thomas Mettler	2486	2538.80	Pennsylvania
George A. Pearce	2456	2470.85	Passaic, N. J.
Joachim Breeding Farm	2319	2439.65	Pennsylvania
Wene Chick Farm	2236	2398.10	Storrs
Lamar W. Sexton	2312	2387.90	Hunterdon, N. J.
Joachim Breeding Farm	2200	2384.50	Storrs
James H. Horne	2239	2382.35	Storrs
Eben Wood	2179	2350.70	Rhode Island
Kauder's Pedigreed Hampshires	2144	2306.65	Georgia
Pine Top Poultry Farm	2126	2304.90	Storrs
Broad Acres Farm	2242	2276.00	Storrs
Floyd H. Moore	2197	2267.80	Pennsylvania
Hubbard Farms	2213	2236.65	Pennsylvania
Fuzzydele Farms	2085	2227.05	Pennsylvania
Ned C. Willoughby	2189	2210.80	Georgia
A. J. Williams	2081	2188.70	Florida
T. J. Harrold	2138	2175.35	Georgia
Pine Mountain Valley Farms	2100	2167.35	Georgia
A. J. Williams	2037	2166.35	Florida

Twenty Highest Barred Plymouth Rock Pens in Country to June 1

Owner	Eggs	Points	Test
Norman W. Amidon	2576	2659.00	Pennsylvania
R. C. Cobb	2513	2592.95	Storrs
J. W. Schaible	2404	2391.30	Hunterdon, N. J.
Dryden Poultry Breeding Farm	2363	2362.80	Storrs
Riley Poultry Farm	2397	2357.70	Texas
P. H. Hibbard	2317	2346.95	Storrs
Broad Acres Farm	2251	2237.00	Storrs
Fuzzydele Farms	2206	2231.85	Storrs
Stuart W. Smith	2182	2219.00	Storrs
R. C. E. Wallace	2191	2208.85	Florida
Riley Poultry Farm	2131	2206.75	Michigan
Booth Farms and Hatchery	2067	2156.40	Oklahoma
Booth Farms and Hatchery	2052	2138.70	Florida
E. B. Parmenter	2023	2121.30	Georgia
Dryden Poultry Breeding Farm	2134	2108.50	Pennsylvania
E. B. Parmenter	2003	2082.00	Pennsylvania
R. R. Parks	2075	2072.65	Pennsylvania
Booth Farms and Hatchery	1950	2071.35	Missouri
Riley Poultry Farm	2030	2062.05	Georgia
Riley Poultry Farm	2010	2055.15	Oklahoma

Twenty Highest White Plymouth Rock Pens in Country to June 1

Owner	Eggs	Points	Test
Riley Poultry Farm	2266	2343.45	Oklahoma
Homestead Farm	2350	2207.80	Pennsylvania
John Spangenberg	2141	2201.35	Storrs
Townsley Trapnest Farm	2133	2201.00	Georgia
Booth Farms and Hatchery	2056	2172.40	Missouri
E. A. Hirt	2075	2169.55	Storrs
John Spangenberg	2094	2163.25	Maine
Kalerok Farm	2001	2145.80	Rhode Island
Riley Poultry Farm	2171	2143.60	Storrs
Booth Farms and Hatchery	2130	2143.00	Texas
Riley Poultry Farm	2213	2083.80	Georgia
E. A. Hirt	1957	2067.35	Rhode Island
Four Winds Farm	2069	2063.35	Michigan
Drumm Egg Farm	1993	2048.40	Georgia
F. L. Woodworth	1934	2043.40	Michigan
Belcarihill Farms	1988	1988.90	Pennsylvania
Kalerok Farm	1886	1984.45	Pennsylvania
Clyde Cochran	1950	1965.90	Oklahoma
Kalerok Farm	1853	1958.60	Maine
Belcarihill Farms	1967	1947.50	Storrs

Average Production in Each Test to June 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for May	Per-Cent Mortality to June 1
Storrs	1,300	155.48	156.80	24.19	1.84	8.92
Pennsylvania	1,066	150.84	153.67	24.43	2.06	13.13
Texas	1,456	150.17	153.26	24.48	2.88	14.14
Georgia	1,352	149.38	151.92	24.38	2.07	15.01
Oklahoma	650	146.75	149.70	24.62	2.00	12.00
Passaic, N. J.	1,144	145.39	149.57	24.67	2.44	11.36
Hunterdon, N. J.	650	142.66	147.14	24.74	1.84	10.61
Florida	1,248	141.20	144.23	24.50	2.08	12.33
Michigan	741	140.02	144.09	24.69	2.02	12.82
Arizona	390	138.57	138.39	23.95	1.28	13.33
Rhode Island	650	130.64	137.20	25.20	1.69	15.07
New York State	1,092	130.72	133.62	24.52	3.39	9.70
Central New York	910	125.05	129.97	24.93	3.07	9.78
Western New York	884	125.74	129.91	24.79	.78	8.14
Maine	1,027	128.39	129.83	24.26	2.53	13.92
Missouri	780	120.16	127.49	25.46	2.69	14.87
All Tests	15,340	140.13	143.54	24.57	2.24	12.17

High Pen, Each Breed, in Illinois Non-Standard Test to June 1

Owner	Breed	Eggs	Points
C. A. Kaiser	White Leghorn	1477	1522.45
Mapleside Poultry Farm	Barred Rock	1544	1506.10
Belldear Hatchery	White Wyandotte	1347	1389.10
Berry Ajax Hatchery	Black Australorp	1288	1328.15
F. S. Tarbill	Rhode Island Red	1294	1316.85
John Pfeifer	New Hampshire	1171	1276.65
Illinois Hatchery	White Rock	1163	1199.35
Wallace Moody	Buff Rock	859	879.20

Five High Pens, R.O.P. Progeny Test, Paterson, N. J., to June 1

Owner	Breed	Eggs	Points
E. B. Parmenter	Rhode Island Red	2741	2806
J. J. Warren	Rhode Island Red	2724	2771
Crooks Farm	Rhode Island Red	2549	2634
W. B. Coles	White Leghorn	2564	2583
E. R. Rutter	White Rock	2456	2473

High Pen, Each Breed, in Vineland, N. J., Hen Test to June 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	1624	1762	Two-Year
E. B. Parmenter	Rhode Island Red	1465	1586	Two-Year
Hockhockson Farm	Barred Rock	1285	1376	Two-Year
Albert Lawton	White Rock	1075	1167	Two-Year
Pine Top Poultry Farm	New Hampshire	719	785	Two-Year
Sebold Poultry Farm	White Leghorn	1122	1186	Three-Year
J. J. Warren	Rhode Island Red	888	967	Three-Year
Nedlar Farm	New Hampshire	714	767	Three-Year
Schwegler's Hatchery	White Wyandotte	1233	1329	Mixed Age
Treiber Poultry Farm	White Leghorn	1217	1315	Mixed Age
Kerr Chickeries	Barred Rock	1184	1276	Mixed Age
Quimby School	White Rock	1076	1160	Mixed Age
Wene Chick Farms	New Hampshire	993	1062	Mixed Age
Kerr Chickeries	Rhode Island Red	970	1052	Mixed Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5390	5828	Two-Year
E. B. Parmenter	Rhode Island Red		5442	Two-Year
Schwegler's Hatchery	Barred Rock	4584	4809	Two-Year
Albert Lawton	White Rock	4068	4326	Two-Year
Pine Top Poultry Farm	New Hampshire	3496	3776	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	7067	7591	Three-Year
J. J. Warren	Rhode Island Red	6794	7324	Three-Year
Nedlar Farm	New Hampshire	5369	5874	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to June 1

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	1796	1938.10	Two-Year
E. B. Parmenter	Barred Rock	1657	1817.60	Two-Year
J. J. Warren	Rhode Island Red	1425	1553.30	Two-Year
Fuzzydele Farms	New Hampshire	1413	1549.00	Two-Year
Lindstrom Poultry Farm	White Wyandotte	1302	1423.25	Two-Year
Fuzzydele Farms	White Leghorn	1440	1576.00	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	5353	5571.40	Two-Year
E. B. Parmenter	Barred Rock	4968	5340.75	Two-Year
E. B. Parmenter	Rhode Island Red	4957	5297.50	Two-Year
Fuzzydele Farms	New Hampshire	4668	5027.25	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4392	4704.90	Two-Year

Fattening Period for Poultry

The length of time that birds are fattened varies with the age and condition of the birds and the methods of the operators.

In the past, birds have been fattened from 7 to 14 days. The present practice involves a much shorter time. One large mid-west packing plant submits the following information:

Broilers: Fed an average of 6-7 days. Gains average 30 to 35 pounds per 100 birds for the feeding period.

Roasters: Fed 4-6 days. Gains. 25 to 40 lbs. for the feeding period.

Fowl: Fed 3-6 days. Gains 30 to 50 lbs. for the feeding period.

About 4 to 6 pounds of feed are usually required for each pound of gain for roasters. Individual birds may vary in rate of gain, due to "bossing" from other birds. Occasionally, a timid bird will actually lose considerable weight. The operator should watch his stock and immediately sell any bird that shows signs of "going stale."

—John H. Vondell in Leaflet 11, Massachusetts State College.

Straight Run vs. Pullet Chicks

You cannot afford to buy pullet chicks. When you buy pullet chicks, you pay for the cockerels and don't get them. You may say you lose money on the cockerels. Maybe you do, but at least you get your pullets at almost the straight-run price.

One man who formerly brooded pullet chicks brooded 1,300 straight-run chicks in February this year. He made $60.00 over the cost of the feed and other expenses for the cockerels. He didn't figure the original cost of the cockerels, for he said he had been paying for them in previous years with his pullet chicks anyway. In other words he reduced the cost of his pullet chicks by almost 10 cents each. In place of his pullet chicks costing him 30 cents, they cost him 20 cents.

—Herbert A. Hogsett, San Diego Poultry Journal, June 25, 1940.

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Vol. 2, No. 20 August 15, 1940

The War and the Poultry Industry

By MORLEY A. JULL
University of Maryland

IN many respects, the war that has overtaken Europe, Africa, and Asia is the most brutally terrifying and devastating war ever thrust upon civilized society. Apparently, most of the world is to be dominated by a ruthless militaristic regime which recognizes only the philosophy of force and intimidation. The social, cultural, moral, and psychological consequences of this cataclysmic debacle are beyond the limits of human conception and may ultimately prove to be more destructive to society than the economic consequences.

At this time, however, the problem of chief concern to us is the possible effect of the war on the poultry industry of our country. Our economic resources are seriously threatened and the disturbance in normal international trade relations that is bound to follow the war will have a major effect upon the industries of this country, including agriculture. Government officials and others have stated, positively, that agriculture will be more seriously affected than most other industries as the result of the establishment of a world-wide barter system of international commerce.

There is not only the possibility of the United States losing much of its normal agricultural export trade with Europe, but, in addition, there is grave possibility of the loss of con-

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Talk presented at the I. B. C. A. Convention, St. Louis, Mo., July 22, 1940 siderable commerce with Latin America, which produces large quantities of agricultural goods which will be in demand by a new Europe.

If less corn, wheat, cotton, tobacco, and lard are to be produced in the United States, what affect will the resulting decrease in production of these items have on the poultry industry? If the purchasing power of the consumer were to be increased, it would probably become necessary to increase the production of milk, butter, fruit and vegetables; and so, again, what affect would the increased production of these items have on the future development of the poultry industry? If the purchasing power of the consumer is not increased, however, there may be no need for an increase in the production of milk, butter, fruit and vegetables. With the loss of the export trade in agricultural products, the necessary shifting in agricultural production is bound to have some effects on our poultry industry.

Probably one effect of the war will be an acceleration in the expansion of the Food Stamp Plan, which in itself should have a beneficial effect on the poultry industry because it should result in an increase in the per capita consumption of eggs among the lower-income brackets of consumers.

Poultry's Place in War-Time

The poultry industry has a definite place in war-time economy because of the relative efficiency of the production of poultry meat and eggs and because poultry can use non-edible waste products from the manufacture of human foods to better advantage than can other livestock. In addition, farm labor that cannot be used otherwise can be used to produce poultry products.

Increase of Back-lot Flocks

As a matter of fact, if the national agricultural economy becomes sufficiently rigid, it is highly probable that there will be considerable expansion in back-lot poultry keeping. The effect that such a development might have on the poultry industry in general should receive the consideration of industry leaders.

With the development of an intensified national defense program, there will arise the problem of making available adequate supplies of concentrates. An educational program should be undertaken to teach poultry producers the economy of using proper substitutes for concentrates that may be temporarily high in price or relatively unavailable.

Adequate consideration should be given to the future development of the dried and frozen egg industries in relation to shell-egg marketing problems.

Since all wars have to be paid for sooner or later and since the world-wide economic repercussions that will inevitably follow the present war will adversely affect the agricultural outlook in the United States, it is highly desirable that the leaders of the poultry industry give thought to the need for developing more efficient strains of poultry. The higher the prices of grain and the lower the prices of eggs, the greater is the need of efficient strains of chickens and turkeys.

Flocks that average 100 eggs per bird use about 8.3 pounds of feed to produce each dozen eggs, whereas flocks that average 200 eggs per bird use about 5 pounds of feed to produce each dozen eggs.

Some strains of turkeys are able to attain a weight of 18 pounds per bird at 28 weeks of age on a feed consumption of about 72 pounds per bird, whereas other strains of the same breed may require about 90 pounds of feed to produce the same sized bird in the same time.

Most of the flocks of the country are relatively inefficient, particularly when it is realized that the cost of feed represents approximately one-half of the total cost of producing eggs and poultry meat.

Must Reduce Mortality

Not only are most strains of poultry relatively inefficient in the utilization of feed, but, in most flocks, there is frequently excessive mortality. Sanitation, culling, and efficient flock management are effective in reducing losses from mortality, but, in spite of this, the industry still suffers the loss of upwards of one hundred million dollars every year. The time has come for the Federal Government to aid in reducing the enormous losses from mortality. Pullorum disease reduces the efficiency of the industry considerably, but its ravages could be curtailed very materially if every flock that is used for breeding purposes were to keep tested for the disease and reactors promptly removed.

Necessity of Governmental Cooperation

Government assistance in this direction is a simple, practical step which the Government could undertake in cooperating with states, hatchery operators and flock owners. It is an economy measure, just as Government assistance in tick eradication, Japanese Beetle control, and the control of several plant diseases are economy measures. A little Federal money spent in controlling pullorum disease would go a long way, because most of the states are at present spending considerable sums in this direction. Federal appropriations in the control of other poultry diseases would also aid in maintaining more efficient flocks.

In order to compete with the new Europe in industrial production, labor in this country will be required to operate more efficiently than ever. Agricultural products will have to be produced more efficiently if those products are to successfully compete with goods produced under a scheme of rigid planned economy, which will prevail in Europe. Indeed, this country may be faced with the responsibility of adjusting itself to the pending world economic revolution.

It may be that a more rigid form of planned economy under government direction will be forced upon us in this country, if for no other reason than as a measure of self-defense. Consider this possible situation for a moment: 400,000,000 people in Europe and Africa completely under the domination of the Nazis, plus the infiltration of Nazi influence in all of South America; 450,000,000 people in China and Southeast Asia under the control of Japan; 200,000,000 people in Eastern Europe and Central Asia under the domination of Russia; an isolated group of 150,000,000 people in the United States and Canada.

If a government-directed planned economy is a probability in the future development of our poultry industry, it is time now for the poultry industry to organize itself in order that there may be most effective cooperation between the government and the poultry industry, and not complete domination of the government over the poultry industry.

Egg Soap?

From Australia "down under" comes a formula for egg soap, a toilet soap.

"It is quite economical to make this soap when eggs are plentiful and cheap. When eggs are incubated all the infertile ones may be used for making soap. Otherwise it is not economical." And this is what is required:

36 eggs — 1 bottle water
4¾ lbs. fat — 1 lb. caustic soad
Oil of cinnamon

Dissolve the soda in water overnight. Warm to blood heat (98 Degrees Fahrenheit). Beat eggs, stir into warm fat. Mix well. (The fat must not be too hot or the mixture will curdle). Pour lye into it in a thin stream. Stir until the consistency of cream. Add a few drops of oil of cinnamon to scent it. Pour into molds and cover well. Let stand a day to set, after which it can be cut into cakes.

Perhaps this forms an excellent base for a commercial formula. Perhaps it suggests an available market that might be capitalized upon.

—The U. S. Egg and Poultry Magazine, August, 1940.

Humidity of Farm Egg Storage Rooms

INCREASING the humidity of the farm egg storage room will pay dividends in winter as well as summer, according to D. C. Kennard and V. D. Chamberlin of the Ohio Agricultural Experiment Station in the Ohio Bimonthly Bulletin, Vol. 24, No. 199.

Until recently it was supposed that if eggs were gathered frequently, stored in a sufficiently cool room, and marketed twice a week, they would meet the requirements for highest market grades, as far as the three or four-day period before marketing was concerned.

Despite gathering three to four times daily in wire baskets and prompt removal to the egg room where they were cooled over-night before being placed in cases, and marketing twice weekly, the Station's eggs graded mostly U. S. Standards, instead of U. S. Extras, particularly during cold weather.

That the eggs from a number of poultrymen using the Wooster Egg Auction tended to go from U. S. Extras to U. S. Standards upon the approach of cold weather led to scrutinizing humidity in connection with the different types of egg-holding rooms used. It was found that those poultrymen whose eggs continued as U. S. Extras during cold weather stored their eggs in rooms with comparatively higher degrees of both temperature and humidity than those whose eggs graded U. S. Standards. This contention was substantiated by tests conducted by the Station.

The egg-holding room at the Station would be generally considered favorable for temporary holding of fresh eggs. It is of concrete construction, located in a northeast corner basement room, with the east end about 4 feet below the surface of the ground. There is little difficulty in maintaining desirable temperatures the year around. The main deficiency is in humidity during cold weather.

Spray Used to Add Moisture

The best solution to this problem has been the use of a small, inexpensive nozzle to produce a spray of water under pressure, and an 8-inch electric fan to stimulate circulation of the moist air.

Average temperature and humidity readings and corresponding percentage of U. S. Extras and U. S. Standards (March 15 to April 4)

	With added moisture	Without added moisture	Change
Temperature	52.3	49.4	+ 2.9
Per cent of humidity	76.8	38.2	+38.6
Per cent U. S. Extras	100.0	7.7	+92.3
Per cent U. S. Standards		92.3	−92.3

Seldom can the dollars and cents value of a practical, inexpensive procedure be demonstrated so positively. The use of the nozzle and fan, plus about 2,000 gallons of water, yielded, on the basis of 8 to 10 cases of large eggs each week, an average of $22.55 a month increased returns during February, March, and April.

The effective use of supplemental moisture to reduce the temperature in egg storage rooms is now a common practice. It is the use of supplemental moisture during cold weather or during dry fall weather to prevent the loss of moisture from the eggs before marketing that is just now gaining recognition. Until more definite information becomes available, it can be assumed that with a temperature of 50 to 60 degrees Fahrenheit the humidity should be around 70 per cent and with a temperature of 60 to 70 degrees Fahrenheit it should be around 80 per cent.

Under these conditions of temperature and humidity, care must be observed to keep egg rooms clean and to supply adequate air circulation to prevent the growth of mold. Eggs are highly susceptible to the absorption of musty odors. Furthermore, mold may enter through the shell, causing deterioration and black rots. In all instances, eggs in a humidified room should be placed at least 1 foot above floor level, and on a slatted platform or bench to insure proper circulation of air.

Grade and prices of market eggs as affected by supplemental moisture in the egg storage room

Date graded	Eggs marketed		Price per dozen		Increased returns from extras over standards Dollars
	Extras large Doz.	Standards large Doz.	Extras large Cents	Standards large Cents	
		Without supplemental moisture			
Mar. 17	....	90	23	19½	3.15
Mar. 21	30	60	22¾	19½	1.95
Mar. 24	....	90	23½	20	3.15
Mar. 28	....	120	22¼	20¼	2.40
Per cent	7.7	92.3	....	....	....
Loss owing to lack of supplemental moisture					10.65
		With supplemental moisture			
Mar. 31	150	....	23¾	22½	1.87
Apr. 4	90	....	22½	22	.45
Apr. 7	120	30	21½	19¼	2.70
Apr. 11	150	....	21¼	20¼	1.50
Apr. 14	90	30	21¼	18¾	2.25
Apr. 18	120	....	20¾	18¾	2.40
Per cent	92.3	7.7	....	....	....
Increased returns from extras because of supplemental moisture					11.17

A Two-Way Chick Co-Op

By JOHN J. SCANLAN

Farm Credit Economist

Reprinted from News for Farmer Co-operatives

SOME chick cooperative associations market hatching eggs for members. Others sell chicks and offer custom hatching at cost to poultry producers. It isn't often that you find a two-way chick cooperative performing both of these services on a cooperative basis. But that's what the Washington Cooperative Chick Association, with a general office at Bellingham, Wash., does.

An Old and Large Association

In this association, on the one side is a comparatively small number of members who operate the chicken and turkey breeding farms which supply the hatching eggs on a cooperative basis to the association. On the other side is the much larger number of members who obtain their chicks and turkey poults at cost from the association. In between these two groups of members, some of whom belong to both groups, is their association which does, at cost, the actual hatching and also operates master breeding farms for the improvement of their chicks and poults.

The association has been in operation for more than 15 years. It was incorporated in the fall of 1924, originally as the Whatcom County Cooperative Hatcheries of Bellingham. During its early years it was operated to market hatching eggs rather than to sell chicks or poults.

Besides the general office and a hatchery at Bellingham, the association has branch offices and chick hatcheries at Blaine, Mt. Vernon, Kent, Centralia, Vancouver, Yakima, and Spokane. Poult hatching is done only at Mt. Vernon, Vancouver, and Yakima. Although most of the chicks and poults are sold in Washington, about 5 per cent are sold in other States, chiefly in Idaho, Oregon, Utah, Montana, Wyoming, and, during the past few years, in British Columbia, Canada.

The association is of the stock type with stock authorized to the amount of $300,000. Any person, firm, or corporation actively engaged in raising poultry may become a member by the ownership, through purchase or accumulation of patronage dividends, of at least one share of common stock of the association at $1 a share. None of the members is bound by contract or otherwise to purchase chicks or poults from the association. On the other hand, the

Farm Credit Administration, Washington, D. C.
(News for Farmer Cooperatives, May, 1940)

members who agree to furnish hatching eggs to the association are under strict contract to deliver all of their hatching eggs to the association.

There is no legal or operating connection between the Washington Cooperative Chick Association and the Washington Cooperative Egg and Poultry Association with headquarters at Seattle. There is, however, some overlapping in the members on the boards of directors of the two associations. Both associations serve much the same territory, work closely together on mutual problems, and many of the members belong to both associations. There are several other cooperative associations in Washington in which the poultrymen who produce hatching eggs cooperate to find a market for their surplus eggs. These associations are not connected with the Washington Cooperative Chick Association.

A $500,000 Business

The Washington Cooperative Chick Association now sells from 20 to 30 per cent of the chicks hatched in the State of Washington. In 1925, with 40 members, it sold 235,000 chicks; in 1939, with 2,900 members, it hatched 2,092,759 chicks and 139,502 poults. The total value of business done during the year ending June 30, 1939, was in excess of $500,000.

It has an incubator capacity totaling 897,000 chicken eggs and 150,000 turkey eggs at a setting. The producers start placing orders for spring delivery in August and September. Hatching formerly stated during the last of December, with the first hatch off about January 15; it is now done on a year-round basis. Chick hatching starts to be heavy in February and reaches its peak in March, but poult hatching does not reach its peak until May. The terms of sale are a deposit of 1 cent per chick or 2 cents per poult with the order, and the balance cash on delivery. Very little custom hatching is done.

Three Master Breeding Farms

The association operates master breeding farms for chickens at North Bellingham and Marysville, and a master breeding farm for turkeys also at Marysville. These farms, covering a total of 326 acres, have the best and most modern equipment.

Their poultry breeding laboratories are larger and more comprehensive in their areas and scope of work than those of most state colleges of agriculture and experiment stations. It is here that the sires for the hens of the members' breeding farms are produced. The owner of breeding flocks agrees to use only male breeding birds approved by and furnished by the association for which he pays a standard rental rate.

On the two master chick breeding farms complete mating and progeny records are kept of all families, as well as trapnesting records from as high as 4,800 hens. All breeding sires sent out to the breeders are individually and pen pedigreed from hens with trapnest records, in their pullet year, of 250 or more eggs of an average minimum weight of 24.5 ounces per dozen. Every egg used to hatch a co-op breeding cockerel must weigh at least 25 ounces per dozen.

Source and Supply of Eggs

Eggs for hatching are obtained from about 150 privately owned breeding flocks of members in the State. From 10 to 20 of these branch breeding flocks are located near each of the eight association hatcheries. Producers who furnish hatching eggs as well as the purchasers of chicks and poults are members of the association. Any producer member may furnish hatching eggs to the association provided he has the approved co-op strain of birds, has a suitable place for a breeding flock, will use only association cockerels or toms, and will follow the rules and regulations laid down for the selection, testing, care, and management of his flock and the grade and quality of eggs to be furnished to the association.

The hens are individually culled and selected by a trained association supervisor. Every hen to be used in the breeding flock is blood tested for pullorum and all reactors are removed. Pullets are not used as breeders. Approved hens are banded and periodic visits are made by the supervisor to keep a current check on their quality.

The price paid to the breeder member for hatching eggs is arrived at by taking into consideration his grade of breeding stock, the percentage of salable chicks and poults hatched from his eggs, the market value of the chicks and poults, the price received for surplus eggs sold, and the expenses of the association. In no case is the amount paid in cash for hatching eggs to be less than the average price paid by the Washington Cooperative Egg and Poultry Association for Extras during the same month. Actually, the total price received has been about double this minimum price for eggs of the Extra grade. In effect, on this cooperative basis the operator of the breeding farm receives for his eggs the sales price of the chicks or poults hatched from his eggs less the association's costs and expenses.

Selling Chicks and Poults

The chicks or poults are sold directly to the members, as well as to some nonmembers, by the association.

The final cost of chicks or poults to members is of course the cost to the association of producing them. However, because it is impossible to figure the exact cost in advance and also in order to finance the operations of the association, what is considered a fair market price for chicks is established at the start of each season, and members and nonmembers alike pay the same price at the time of delivery. Then, at the end of the season, the association returns to each member the difference, in the form of capital stock, between what he has paid for the chicks or poults, and what it has actually cost the association to produce them, after setting aside an amount in a reserve fund to guard against future losses and to protect the value of the stock issued to members.

Naturally there is a difference of interest between the seller and buyer groups of members of the association. The members who furnish the hatching eggs are interested in as large returns as possible for their eggs; the members who purchase the chicks and poults are interested in obtaining the best chicks and poults that can be obtained and at the lowest possible price.

This difference of interest has caused no serious differences or conflicts in the association. Both groups realize that their future as poultrymen depends upon the producers' obtaining superior laying stock at low cost. The poultry producers of the Northwest require a higher quality bird than is needed in almost any other section of the country. The distance from market means that they must produce eggs at lower cost than poultrymen closer to consuming centers if they are to stay in business. This means that the hens must have the ability to lay more and better quality eggs and to live longer.

Capital stock certificates are issued each year both to those members who sell hatching eggs to the association and to those members who purchase chicks and eggs from the association. To the former the certificates are for underpayments; to the latter they are for overcharges. These certificates show the amount of ownership each member has in his association. The capital stock first issued is retired on a revolving-fund basis. In this way those who move out of the poultry business, or do not use the association any more, have returned to them their portion of the underpayments or overcharges made in former years on sales of hatching eggs or purchases of chicks and poults.

This revolving-fund method of operating is in reality a deferred method of paying patronage dividends. It assures that those who make use of the services of the association are the members who are financing it; those who no longer use it will have their stock retired for cash and thus will no longer have their money tied up in something in which they are not interested and have no desire to have a voice. All stock issued prior to 1933 has now been retired; that is, patronage dividends have been paid on the business done prior to 1933.

Several years ago the association price was 18 cents per chick. For 1940 the price for unsexed White Leghorn chicks ranged from 9 to 11 cents delivered, depending upon the hatching date. The heavy breeds, of which relatively small numbers are sold, sell at 1 to 2 cents higher. White Leghorn pullets sell at 10 to 12 cents higher than unsexed chicks.

A Pioneer in Sexing

The Washington Cooperative Chick Association was one of the first hatcheries in the United States to start separating chicks as to sex. It began sexing in 1934; at present about 80 per cent of the chicks are sexed by its own especially trained personnel. It guarantees its sexing to be 97 per cent accurate. Cockerels, the by-product of sexing, are either destroyed or sold chiefly at Spokane for broiler purposes at 2 and 3 cents each.

During the past three years the association has actively branched out into the hatching of turkey poults for those producers who are interested in raising turkeys. The production of poults has increased from 20,000 in 1933 to 139,330 in 1939.

The poults are produced on the same plan as the chicks. All the breeding toms come directly from the master turkey breeding farm where the breeding program is developed through a system of trapnesting and progeny testing.

When the turkey breeding program was started three years ago, the association obtained as its foundation stock the best of the entire breeding flock of one of the original founders and outstanding breeders of the recently developed Broad Breasted Bronze turkeys. This breed has attained great prominence and has had much publicity during the past two years.

The price on poults for 1940 started at 45 cents each during March and April and will be graduated downward to 30 cents for June.

Benefits to Producers

While it would be extremely difficult to measure either the direct or indirect benefits to the Washington producers of this cooperative chick hatchery, there can be no doubt that the benefits have been of great importance.

Beside effecting a lowering of the actual selling price of chicks and poults to nonmembers as well as to members in the area, the hatchery has shown earnings every year since 1924, totaling $341,390, with earnings as high as $42,165 for a single year. It has paid back $71,402 as dividends on members' stock, $49,685 as deferred payments on chicken and turkey hatching eggs, $9,366 as employees' bonuses, and $127,855 in common stock retired, in addition to having put $86,633 in reserve funds, of which it has returned $26,191.

The association has been especially helpful in bringing about production of better chicks and poults not only as far as its own operations are concerned but the operations of its competitors as well. It apparently has been of paramount importance in increasing egg production per hen and in obtaining better livability. It has done much to put Washington on the map as a source of high quality turkeys. Without these advantages the Washington producers would have found it even more difficult during the past years of low egg and turkey prices and high feed costs to compete with producers in other areas who were nearer to the large eastern markets and had lower feed costs.

Sunflowers As Green Feed and Shade for Turkeys

On many of our Willamette Valley, southern and eastern Oregon turkey farms, shade is at a premium during the warm summer days. Sunflowers fill the requirement just where the shade is needed, and provide the additional advantage of spreading the turkeys out over a greater area, thus lessening the possibility of feather picking or other evil habits. Where sunflowers are used for shade, the turkeys appear to be more comfortable and hence make better gains, during the warm weather, than where individual trees or rows of trees are used for shade, with consequent crowding for space by the birds.

Large amounts of green feed are provided for the turkeys by the growing sunflowers. Possibly the green feed is not as valuable as the leguminous green feeds, but it beats no green stuff by a considerable margin and appears to be relished by the turkeys. The birds gradually work into a field of sunflowers, stripping the leaves to a height of 4 feet or more. Under ordinary conditions, all of the leaves will be used before the sunflowers ripen the seed.

According to the Oregon State College, the yields of sunflower seed are comparable to corn in bushels per acre. The seed is readily eaten by the turkeys and is highly nutritious, making a much-desired gloss on the plumage of the birds.

The two common varieties are the Russian and Manchurian. The first named is very tall and rather late in maturing, but makes excellent shade. The Manchurian is increasing in popularity, for at least a part of the planting because of its shorter growth, good yielding qualities and early maturity.

—J. C. Leedy, The Eggsaminer.

Hitting All the Turkey Markets

Condensed from Checkerboard News

SAY you make $1,000 on one brood of turkeys a year. The chances are good that you can double your profit on two broods and triple it in three. In fact, some turkeys raisers figure they can more than double or triple their money, because they make use of the same brooder equipment two, three or even four times a year!

The way to do this is to plan to start turkeys to hit more than one of the several good market times. It used to be that there was only one good market — Thanksgiving—one fair one—Christmas. But people now are eating more turkey, and prices remain quite steady over a much longer period of time. Here are the average prices paid eastern turkey raisers over the past 4 years, according to Government reports:

September	23¢	December	24¢
October	23¢	January	24¢
November	24¢	February	24¢

The table below shows you how you can plan for as many as four different broods to hit four different markets, using the same brooding equipment each time. Say you want to sell for the September, Thanksgiving, Christmas and Easter markets. Your selling dates could be approximately Sept. 1, Nov. 15, Dec. 20, March 15. Counting back 24 weeks, the poults should be started on about the dates shown in the table. We have found that turkeys weighed 12 to 14 lbs. for hens and 16 to 18 lbs. for toms at 24 weeks.

Selling Date	Starting Date	Weeks Between Starting Broods
Sept. 1	March 15	. .
Nov. 15	June 1	11
Dec. 20	July 5	5
March 15	Oct. 1	12

There would be 11 weeks between starting the first and second broods. This means that the first group should be moved to the range or growing houses the middle of May when nine weeks old, leaving two weeks to clean and disinfect the brooder thoroughly before the second flock is started.

Between the second and third broods there are only five weeks. However, this would be in late June, when turkeys will be in the brooder only about four weeks. There is plenty of time between starting the third and fourth groups—12 weeks.

If you follow the range system of rearing, it is best to raise each of the four flocks in a separate enclosure. One thousand growing birds can be started on two acres, but

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(Checkerboard News, March, 1940)

should have at least four acres after they are 18 weeks of age. For four broods of 1,000 each, you should have at least 16 acres fenced off into four sections.

Semi-Yard Plan

If you are using the semi-yard plan for the growing turkeys, you can easily raise two broods a year in your present growing equipment, and can raise four by doubling the number of your growing yards and shelters. Going back to the table of suggested dates for starting and marketing, we see that the first flock would be out of the growing yards and off to market by Sept. 1. At that time, the flock started in the brooders on July 5 would be eight weeks old and could be moved into the yards after a thorough disinfection. The broods started on June 1 and Oct. 1 could use common growing pens and shelters in the same way.

Houses from Cemented Bags

A report in Poultry (Sydney, Australia, poultry publication), tells of the use of cemented bags in constructing laying and brooder houses. Numerous Australian poultrymen have used the method and find the bag buildings entirely satisfactory in service as well as inexpensive to construct.

The usual procedure is to split the seam on the bag and tack the edges to a slat frame. Several coats of cement "paint" are applied, the first two being cement and water alone, mixing the two to a consistency of thin cream. Two coats are applied to the outside, the section is put into the wall, allowed to stand for several days, and two coats are put on the inside.

After another drying period, the last application of cement (this time a 1-part cement, 2-part sand, plus water, mixture) is made, painting the "cream" on all interior points where the cemented sacks meet a stud, divider, or slat.

TO support the Texas Poultry Federation's efforts to increase the consumption of fryers, the weekly Texas Mesquiter offered a year's subscription to the newspaper in exchange for two fryers.

AN English poultryman claims that he saves a seventh of his feed without affecting egg production by withholding food from his birds each Sunday. Egg yield, says the breeder, according to the London publication Eggs, is all the better for the one day in seven fast.

Concrete for Poultry Houses

Condensed from a Booklet

TO KEEP the flock vigorous, healthy and active throughout the winter months the house must be warm, dry, well-lighted and properly ventilated. Thousands of successful poultrymen have built with concrete as the most practical means of meeting these requirements. A well-built, well-lighted and ventilated concrete poultry house is not only warm and dry in winter, but it also provides cool, refreshing quarters for the flock during hot weather. In fact, the modern concrete house makes it easy to maintain desirable, even temperatures either in winter or summer, thus helping to maintain high egg production throughout the year.

Other important advantages of the concrete poultry house are: Smooth concrete surfaces are easily cleaned and kept clean and provide no crevices to harbor lice, mites or other poultry parasites; rats, weasels and other animals are kept out. Because concrete lasts indefinitely, a well-built concrete poultry house costs practically nothing for repairs and upkeep. Added to these advantages are the important considerations that a concrete house is economical to build and is highly firesafe.

The concrete foundation should be 8 inches thick, supported on a footing 16 inches wide and 8 inches thick for average conditions. Footings should be on firm soil, at least 2 feet below the ground surface and just below frost line. It is also important to place two ⅝-inch round or deformed reinforcing bars in the foundation wall where soft footing conditions prevail.

Floor Construction

Construction of poultry house floors deserves special attention. Experience shows that well-built concrete floors are outstandingly practical and serviceable in the poultry house. The concrete floor is widely used because it is ratproof, sanitary, economical and lessens the work of caring for the flock.

Careful attention to the simple directions mentioned here will assure a warm, dry concrete floor. First of all the house should, if possible, be located on high, well-drained ground. Construction is then as follows: On a well-tamped fill of cinders, gravel or crushed rock having a thickness of 6 to 8 inches above grade, place a 1½-inch layer of concrete over the entire floor area, leveling and smoothing with a straightedge. After this layer hardens, place smooth, waterproof asphalt roll roofing, 40 to 50 lb., lapping and carefully cementing

From the booklet, "Improved Poultry Housing With Concrete," published by the Portland Cement Assn., 33 W. Grand Ave., Chicago, Ill.

joints. Complete the floor by placing the 3-inch top layer of concrete. Required floor drains, water pipes, etc., should be in position before placing the concrete floor.

The Walls and Roof

In building concrete masonry walls it is best practice to place two ¼-inch round reinforcing bars in the mortar joints above and below windows and doors. These bars should be continuous around the building, lapped 18 inches at splices. The mortar mix for concrete masonry walls above grade is 1 part portland cement to 1 part lime putty or hydrated lime to 6 parts mortar sand. Mortar used below grade should be 1 part portland cement to 3 parts mortar sand plus 10 lb. hydrated lime per sack of cement.

Reinforced concrete insulated double walls are constructed by placing a 1-inch thickness of rigid insulation midway between the inner and outer forms and depositing the concrete mixture on either side of the insulation. The concrete mix should be deposited on opposite sides of the insulation at the same time in layers about 6 inches deep. As the concrete is placed it should be thoroughly spaded against the form faces to obtain smooth surfaces, free from blemishes. Either wood or metal forms may be used. They should be tight and rigidly braced to make sure the finished wall will be straight and plumb. Both inner and outer walls are reinforced with ⅜-inch bars—vertical bars 18 inches apart, horizontal bars 8 inches apart.

Where it is necessary to stop work during construction, joints should be left level, but rough. Then, before placing concrete again, wet the top surface and cover it with a cement mortar about ½ inch thick. This helps insure tight bond between the old and new concrete and prevents stone pockets along the joint.

Reinforced concrete hollow double walls are usually built using metal horizontal sliding molds fitted with a metal core. Both the inner and outer walls are constructed at the same time. The typical wall mold assembly is 4 or 5 feet long. After each setting of the mold, it is filled with a very stiff mixture of concrete and tamped. The molds are then immediately released and moved forward, and another section of the wall is placed, and so on around the perimeter of the building until the course is completed. Other courses are then built in the same manner to the required height. Each course is usually about 9 inches high. In warm weather 2 or 3 courses can be built per day.

Inner and outer walls are tied together with ¼-inch bars bent at right angles about one inch either end and placed 15 inches apart on each course. Each wall is reinforced with ¼-inch bars laid horizontally on the top and center of each course of wall as built. Other types of ties and reinforcement may be used (if the builder prefers). Strips of wire mesh with No. 3 gage wires at 6-inch centers longitudinally and No. 5 gage wires at 12-inch centers as crossties have been satisfactorily used. Ties should be made of noncorrodible material or should be given a protective coating, especially on the portion which will be exposed between the two wall components.

The well-insulated firesafe concrete roof construction is readily installed by farm building contractors and assures long life with virtually no upkeep. Principal steps in construction are as follows:

1. Set precast concrete joists with 4-inch bearing on the concrete wall. Joists are manufactured to have the exact length required.
2. Set bridging between joists at supports. Bridging consists of 3x8x16-inch concrete blocks.
3. Place spreaders and temporary forms.
4. Place 2-way reinforcement for concrete slab: ¼-inch round bars are placed 12 inches on centers parallel to joists; ⅜-inch round bars are then placed 12 inches on centers at right angles to joists.
5. Place electrical conduit or other utility connections.
6. Place and finish concrete slab.
7. Strip forms after concrete has been moist-cured for 7 days at warm temperatures.
8. Lay rigid insulation in mastic and install a high quality built-up roof.

How to Make Quality Concrete

Mixing water for concrete should be clean enough to drink. It is particularly important to use only a limited, measured amount of water per sack of cement. With average damp sand and gravel not more than 5 gallons of water should be added per sack of cement. If sand is wet add only 4½ gallons; if dry, add 5½ gallons of water per sack of cement.

Sand should be clean, hard and well-graded, that is, with particles of many different sizes varying from fine up to those which will pass through a No. 4 screen (4 openings to the inch). Gravel should be clean and hard, ranging in size from ¼ inch up to 1½ inches.

Bank-run gravel is often suitable for concrete if tested to make sure that it is clean enough, then screened into separate lots of sand and gravel. It is not wise to use the natural mixture of bank-run gravel without testing for silt and screening into proper sizes.

Portland cement should be kept in a dry place. Cement containing hard lumps should not be used.

Mixing and Placing Concrete

Good concrete is made by carefully measuring all materials—water, cement, sand and gravel. A concrete mix of 1 sack of portland cement to 2¼ cubic feet of sand to 3 cubic feet of gravel with 5 gallons of water added per sack of cement for average moist sand makes a satisfactory trial mix for floors, walls and roof slabs. Foundations and footings may be of the following mix: 1 sack of portland cement to 2¾ cubic feet of sand to 4 cubic feet of gravel with 5½ gallons of water added per sack of cement for average moist sand.

For machine mixing, allow 1 to 2 minutes' mixing after all materials are in the mixer. Freshly mixed concrete should be placed in the forms immediately, then thoroughly tamped and spaded to assure smooth surfaces and dense concrete.

Finishing and Curing Concrete

Newly placed concrete is leveled off with a strike board. Then a wood float is used to make an even surface. Further finishing is left until the concrete sets enough to become quite stiff. If a gritty nonskid floor is desired, the wood float is used again. If a smooth dense surface is required, however, the steel trowel is employed in finishing.

Concrete needs moisture to cure and harden properly. New concrete should, therefore, be protected from drying out for at least 5 days. Floors and other horizontal surfaces should be kept covered with moist earth, straw or burlap and this material kept wet for the required time. Walls should be covered with tarpaulins, burlap, etc., and this covering kept wet or some protection may be secured by leaving the forms in place. For concrete work in cold weather, heat the water, cement and gravel and protect the new concrete from freezing for at least 3 days. Temperatures of about 60 degrees Fahrenheit should be maintained during this time.

Calculating "Average" Egg Production

There are three ways of arriving at an average egg production; these are: (1) Hens Housed; (2) Monthly Average; (3) Hen-day basis.

Hens Housed. In determining average egg production on a hens housed basis, one divides the total number of eggs produced during a week, month or year by the maximum number of hens and pullets housed during the year. This is the plan now used at all of the standard egg laying contests and is indicated by the uniform rule which reads "the records of the 13 pullets will constitute the pen record." It is the most simple method of determining average egg production and yet it gives the most complete picture of the value of a poultryman's stock.

Monthly Average. With this plan, one computes the average egg production each month and adds the 12 monthly averages to obtain the yearly production. The number of birds on hand at the beginning of the month is added to the number on hand at the end of the month and this total is divided by two to give the average number of birds for the month. Then the total number of eggs laid during the month is divided by the average number of birds for the month to determine the average number of eggs per bird. This kind of an average gives a much higher figure than that obtained by the hen-housed basis and gives no information regarding culling and mortality.

Hen-day Basis. Some people feel that this is the most accurate method of arriving at an average. This is true, but it is a time consuming method. It takes into account the impossibility of a bird laying eggs in the pen after she has been culled or after she has died. This method is based on the fact that 100 per cent egg production would result from the production of an egg a day from each live bird.

Suppose one uses the month of January as an example. If there are 100 birds in a flock, there will be 3100 hen days for the month. But suppose that one bird dies on the 10th of the month. There are twenty-one days left in January during which this bird will not lay; in that case there will be 3079 hen days left. Suppose four birds are culled on the 13th of the month. There are 18 days left in January during which these birds will not lay. The number of hen days has now been reduced to 3007. If this number is divided by the number of days in the month the average number of birds for the month is obtained; this is 97. If 1550 eggs are collected during the month, the average number of eggs per bird is 15.9, while on the "monthly average basis," the rate would be 15.8 eggs per bird, on the hens housed basis it would be 15.0. Mortality may be high and culling very heavy during the year and yet an average on a hen-day basis does not reveal this to the reader.

The hen-housed method is coming into more general use and is the one recommended by the State Institute as the most simple and yet the most accurate.

—D. H. Horton, New York State Egg Laying Contest Bulletin.

POULTRYMEN on 39 farms keeping records in cooperation with Cornell University received 39 cents an hour for their labor in 1938, according to a summary appearing in Cornell Bulletin No. 422. It required 1.75 hours of labor per hen per year, or an average of 1290 hours of work per farm.

POULTRY RESEARCH

Breed Difference Found in Manganese Requirements

There was a breed, or at least a strain, difference in the manganese requirements of laying birds for hatchability and possibly for egg production, between Barred Rocks and White Leghorns in tests conducted at the Michigan Agricultural Experiment Station by W. V. Golding, P. J. Schaible, and J. A. Davidson, according to the report of their work which appeared in Poultry Science, Vol. 19, No. 4.

In an experiment where both White Leghorns and Barred Rocks were fed two different low-manganese basal rations, which were supplemented with 50 p.p.m. of manganese, the Barred Rocks gave a hatchability of 59.7 and 58.7 per cent compared to 81.3 and 81.6 per cent when manganese was added, while the White Leghorns gave 75.1 hatchability on one low-manganese ration and 85.3 per cent when manganese was added.

Egg production was improved in all instances when manganese was added to the low-manganese rations, and the Barred Rocks were slightly more affected in this respect than the White Leghorns. Fertility showed considerable variation, but was not correlated with the manganese content of the ration.

Throughout the series of tests, the Barred Rocks were more sensitive to a lack of manganese than the White Leghorns.

Effects of Sulphur on Chick Growth and Bone Ash

In the absence of direct sunlight, 0.25 per cent cod liver oil, containing a minimum of 400 A. O. A. C. vitamin D chick units per gram, failed to promote normal bone calcification and growth when rations contained commercial flour sulphur, according to O. E. Goff and C. W. Upp, reporting in Poultry Science, Vol. 19, No. 4, on work at the Louisiana State University Agricultural Experiment Station.

The 8 to 12-week growth rate of chicks afflicted with "sulphur rickets" was accelerated by including 0.5 per cent cod liver oil in a basal ration and in rations containing commercial flour sulphur. The percentage of bone ash of tibiae was greater for chicks which received sulphur and 0.5 per cent cod liver oil than for those which received sulphur and 0.25 per cent cod liver oil.

Rickets, as indicated by percentage of bone ash, was not completely prevented in all cases by feeding 0.5 per cent cod liver oil in rations containing sulphur. However, leg weakness in live chicks was noted only in lots fed 7 and 10 per cent flowers of sulphur.

Rations containing 5 per cent commercial flour sulphur consistently gave greater 2 to 8-week gains per chick than rations containing 2.0 per cent commercial flour sulphur or no sulphur when 0.5 per cent cod liver oil was included.

Two per cent micronized sulphur or 2 per cent flowers of sulphur gave greater 2 to 8-week gains per chick than did 5 per cent of these sulphurs.

Commercial flour sulphur, administered in hard gelatin capsules over a six week period, resulted in a chick mortality of 45.6 per cent. The mean weight of surviving chicks was not adversely affected.

Rations containing more than 4 per cent of the various sulphurs gave the greatest chick gains when commercial flour sulphur was included, followed in order by 325-mesh sulphur, micronized sulphur, and flowers of sulphur. When less than 4 per cent of the various sulphurs was fed, the rations containing flowers of sulphur gave greater gains than those containing micronized sulphur.

Egg Shell Quality Unaffected by Production

There is no significant difference in egg weight or shell thickness between eggs laid by hens producing over 200 or under 200 eggs per year, according to the results of a recent study made at the Washington Experiment Station by L. A. Wilhelm.

Reporting in Poultry Science, Vol. 19, No. 4, Wilhelm states that rate of production and shell thickness are independent of each other; there is relatively little decrease in shell thickness between the first and last eggs of the same clutch in one, two, three, or four-egg clutches; there is a definite seasonal trend in shell thickness which is closely related to temperature, temperature also appearing to influence dry weight of shell and the percentage of shell of total egg weight; and shell thickness is significantly correlated with percentage of shell of total egg weight and dry weight of shell, and is not independent of egg weight.

Conclusions are based on a series of tests covering 13 28-day periods. A total of 7,002 eggs was produced with individual measurements being made for each egg.

Feed Consumption of Bronze Turkeys

It required 71 pounds of feed to grow a turkey up to the age of 28 weeks in tests at the University of Missouri Agricultural Experiment Station, according to the report of E. M. Funk and H. L. Kempster in that station's Bulletin 414.

For the first four 4-week periods, the average feed consumption per bird was 1.1, 3.35, 5.82, and 9.04 pounds, respectively. For the fifth, sixth, and seventh 4-week periods, feed consumption per bird averaged 13.35, 17.44, and 20.59 pounds.

Wire vs. Range for Poults

As a control for blackhead, rearing poults on wire seems to be a fairly successful undertaking, according to the findings made in a test on turkeys conducted by A. G. Taylor at the Central Experimental Farm, Ottawa, Canada.

Poults on range had deaths from blackhead in each of four test pens while poults on wire showed no losses from blackhead in an equal number of pens, according to a report in the Canadian Poultry Review.

Analysis of the Baltimore Egg Market

An educational program for consumers, improved handling methods by wholesalers and retailers, and several methods by which producers can better egg quality are suggested by L. E. Cron, R. F. Burdette and S. H. DeVault, University of Maryland, following a survey of the Baltimore egg market. Their conclusions are given in Bul. 430 of the University of Maryland Agricultural Experiment Station.

Observations on egg quality indicated that much improvement could be made in elimination of eggs containing blood and meat spots, and small, cracked, dirty eggs from retail channels. A lack of attention to proper packing methods was apparent. In many instances, eggs were found packed both ways in the case, and, invariably, if the eggs had been held a few days, those packed with the pointed end up were inferior in quality.

Meat packers and chain stores would purchase large quantities of local eggs if a dependable supply of good quality eggs was available. Producers should provide facilities for selling more eggs to these agencies.

Many retailers were found to lack proper facilities for storing eggs. Only about 35 per cent of them stored eggs in refrigerators in summer, and about 25 per cent kept them under refrigeration the year around. Rapid deterioration resulted from storage at room temperatures. As 44.6 per cent of the stores held eggs for 4 days, it is suggested that most retailers should purchase eggs in smaller quantities and at more frequent intervals in an effort to improve the quality of eggs as they go to the consumer.

An educational program on egg quality should be conducted in Baltimore for the benefit of consumers and retailers. Price, rather than quality, was the major factor in determining what eggs were purchased in many instances.

Fourteen per cent of all families questioned said they were unable to tell a fresh egg. Fifty-two per cent of the families were willing to pay a slightly higher price to cover grading costs when asked "Would you be willing to pay more for eggs graded by a licensed Government Inspector?" One-third of all families had no preference for shell color, and slightly over one-third preferred white shelled eggs. Colored families had a distinct preference for brown shelled eggs, believing them to be richer or to have a darker yolk and stronger flavor that was greatly desired in cakes.

High quality eggs were demanded by the drug store, restaurant, and hotel trade. More than one-half of the shell eggs were bought on a graded basis and 98.1 per cent were candled. Bakeries use frozen and dried eggs almost exclusively, and the mayonnaise industry in Baltimore uses about one and one-half million pounds of frozen egg yolks annually.

Marketing Costs of Iowa Poultry and Eggs Studied

The cost per pound of marketing dressed poultry between an Iowa farm and the New York market averaged 8.1 cents per pound in 1938, according to the report of A. C. Oderkirk in Iowa State Agricultural College's Report on Agricultural Research for 1939. The cost from an Iowa farm to Chicago averaged 7.3 cents. Processing and plant costs constituted the greatest percentage of the cost, ranging from 4.1 cents to 7 cents per pound, and averaging 5.6 cents.

Eggs went from the Iowa farm through various handlers, to the New York market at an average of 5.7 cents per dozen, and to Chicago at 4.5 cents per dozen. Freight constituted the largest single item of expense for egg handling, averaging 2.3 cents per dozen to New York and 1.18 cents to Chicago. Next highest was the case charge of 1.17 cents per dozen.

The data from this study indicate that substantial reductions in assembling costs of processing plants are being made from former years, but variability found in methods of assembling and the complex terminology applied to these products has created a confusing situation which hinders the producer in his choice of the most economical market outlets available.

¶¶ THE Doughnut Corporation of America, largest single user of egg yolk in the country, according to the New England Poultryman, breaks and dries 10,000 cases of eggs daily from February through June each year.

Effect of Males' Diet on Fertility

Because a deficiency of vitamins A and E, either one or both, eventually leads to a failure of sperm production in the rat, it has been assumed that the same is probably true in other species. However, the writer has kept adult male chickens for more than 6 months on a diet that contained only about 10 International Units of vitamin A per 100 grams of feed—that is, about 6 to 10 per cent of the minimum requirement of actively growing chicks —without observing any decrease in their sperm production.

Similar results were obtained when a diet rendered deficient in vitamin E by treating with a solution of ferric chloride in ether was fed for five months. Furthermore, Adamstone and Card found that male chickens could be kept on a diet deficient in vitamin E for at least a year, and in some cases for as long as two years, without losing their ability to fertilize. Thus it may be concluded that, although male chickens may eventually become sterile if kept on diets that are markedly deficient in either vitamin A or E or in both, they are able to subsist for a rather long time on such diets without losing their ability to fertilize.

It has been claimed that when male chickens are fed a diet in which the protein is derived from plant sources only, they mate less frequently than when their diet contains some animal protein. Also, it has been reported that in one experiment the feeding of silage to male chickens tended to increase their sperm production. In both cases, the experimental technique appears to have been faulty and incapable of yielding results from which reliable conclusions could be drawn.

Available experimental evidence indicates that it is difficult to decrease the sperm production or the fertilizing capacity of adult male chickens by dietary means, unless a given deficient diet is fed for a rather long time or unless the dietary deficiency is such that it affects the general health of the males. Also, there is no acceptable experimental evidence that the sperm production or fertilizing capacity of healthy male chickens can be increased by diet.

—Harry W. Titus, Yearbook of Agriculture, 1939.

"WE HAVE practically eliminated all feather picking by feeding greens, using deep waterers and keeping a hopper full of oats at all times," declares D. M. Sewell, North Carolina turkey raiser, in Turkey World. "Changing from shallow to deep waterers decreased picking noticeably. Wires are stretched above all feeders for beak cleaners."

Diary of a Poultryman

By P. S. WHITE

Wayne County, Ohio

August 1 — Donn White and I took a one day vacation and went to Cleveland to see the World's Poultry Congress. And did we have a great time? Well, I guess yes. Didn't get home until 3:30 a.m., and then it was morning. We both saw so much that we don't know exactly what we did see. But the high lights that have been seared on my mind, as with a white hot iron, are the Press Banquet at the Carter Hotel, visiting with old and new friends and hearing the Stone Mountain quartette singing the old negro spirituals of the long ago. Talked to old John Ivey from way down in Alabama until 1:30 in the morning. Yes, it all brought back memories and tears to the eyes, for I am from Dixie, too.

August 2—Just resting today, doing the regular work and entertaining visitors. There were four cars here today at one time and three others at intervals. The queer part of the whole thing is that they all seem to know me. Walter Buss wired from Cleveland last night that he was conducting a tour on his own hook and for me to stand by. I did, and the visitor was the distinguished Dr. A. Ghigi, president of the University of Bologna, Italy. With the learned Doctor's English and my smattering of French, I think his visit was a success.

August 3—Well, it is over, the largest tour from the Congress to date has come and gone. Three bus loads, around 100 people, from 14 foreign countries visited this ranch, Walter Buss and the Ohio Experiment Station. And you should see my visitor's register; England, Scotland, Wales, Germany, Italy, Palestine, Cuba, Mexico, France, Russia, Denmark, Sweden, Canada, Chile and 22 states were represented. Snapshots and questions were the order of the day.

August 5—Kid White, Nancy Jane and I took in the Congress all day until closing time. We walked and walked and looked and looked, and I wonder if I have seen it all yet. The Stone Mountain quartette sang Swing Low, Sweet Chariot especially for Kid White, my Yankee wife.

We saw the dances of the Osage Indians from Oklahoma. Nancy Jane wanted to dance with Junior Pack Horse, but was afraid the Old

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Big 'uns would scalp her. So she admired Junior from the distance. Yes, it has been a big show, this World's Poultry Congress. It will probably be the last I will ever see, but I have enjoyed every minute of this one.

August 7—Editor Hartman spent yesterday afternoon and last night with us. We had lots to talk about. All visitors to the Congress are going to have lots to talk about for a long time to come. Shortly after he left for Cleveland this morning, more visitors arrived.

This Diary seems to be well read, for all seemed to know me and my trials and tribulations. I don't quite understand it, but there comes over me a certain amount of sadness when visitors leave. Maybe it is because I have to put on the work harness again and hold the same old nose on the same old grindstone.

August 8—We are gradually getting back to normal again. The boys have started to clean the east end of the block house. It will probably take all of this week. The birds were gently shooed through the door into the west end, which was cleaned last week. Walter Buss and his crew are all tired out from the Congress, but they will come out in a short time and blood test this group. So far, there has been less than 1 per cent reactors, and I call that a good record.

August 9—Donnie locked four of the range houses tonight, so we can catch out a few cockerels for tomorrow's auction. There are still quite a few sticking around. Only one coop of old running gear hens will be sold and such stock doesn't bring very much. They are soup stock, if one likes chicken soup. I know one individual who doesn't care for chicken soup no-how.

August 10—There were five coops of cockerels to sell which was more than I thought there would be. I suppose I will be selling roosters all summer as there seem to be quite a few more. And some smart Alec will roost so high in the trees that we won't be able to catch him until the snow flies. There was a dead one on the range this morning and I am wondering if my old trouble is coming back on me again? Anyway, it is not a pleasant thought.

August 12—Saturday and the end of a full week. The east end of the block house has been cleaned. The oil on the floor should be soaked in enough by Monday to put down the litter. I really don't know how much good it does to oil the floors with old crank case oil, but I do know that it presents a clean appearance. In just a few days after applying the litter, no trace of the oil can be seen.

The plans are that Monday night Walter Buss and crew will blood test another group of hens. Then

Tuesday morning we will start cleaning the west house. It takes about a week to thoroughly clean up a house with all of the regular work.

August 15—For the first time in several weeks, Ralph Treat and I had time to talk over the events of the past few weeks. It seems that Ralph had his hands full during Congress week with the egg auction demonstrations. He was very happy about the whole thing.

The birds were blood tested last night, and this morning work was started in the west house. In about three weeks all of the cleaning will be finished and then we will have a breathing spell, I hope, I hope, I hope.

August 16—It is queer to me, but the longer I am in this business, the more I learn. But the things I learn seem to be so simple. Take, for instance, the galvanized tanks for the water fountains. Last year when we cleaned, they were scrubbed and allowed to refill. And right there was where I made the mistake, for they rusted worse than if they had been in use. As a result of that little mistake, two tanks had to be replaced in the west house today. From now on, the first thing we are going to do when starting to clean is to drain the tanks and give them a good coating of oil.

August 17—Apparently I am going to have a few head of live stock to sell for a long time to come. Walter Buss culled out a coop of hens a couple of nights ago, so I took them in today. There were two coops of cockerels also. All of this market stock is held in the battery until sale day, which is every Thursday. There are no houses available to hold them, and after all, the battery is the ideal place for them. They are fed some grain and gruel like wet mash. If the batter is wet enough, no water is necessary, which is quite an item.

August 18—I am beginning to see the handwriting on the wall. More of these water tanks will need to be replaced soon. In the past, I have tried soldering them, but the cheapest way in the long run is to replace them and forget about it. A leaky fountain is always a source of mental anguish. Buying is often hard on the pocket book, but it does take the tension off of the old bean. And that is what I need—peace of mind. I have ordered six new tanks, and this means I will have two in reserve.

August 19—The west house is all ready to go when the floor is dry. All the oil should be soaked in by Monday. Monday night Buss will come out again. Tuesday morning we will start in the east house. The eggs will go in Tuesday. I will go to the live auction on Thursday. Friday

I will deliver the eggs again. Next Saturday will be like today unless it rains. The work is all cut out; all I have to do is follow the schedule. Such is life on a chicken ranch.

August 21 — For some reason or other, we miscalculated on our available excelsior for nesting material. It takes a bunch of material to make 150 nests in any man's chicken house. The nice part about using excelsior is that it stays put and also that the nests are easy to repair when they become ragged. A small flake of excelsior goes a long way in repair work. It will only be a short time until the birds will bounce in the nests and scratch all the excelsior out on the floor for no earthly reason as far as I can see.

August 23—Earl Pottinger, a poultryman from Southern California, was a very interesting visitor this afternoon. He is looking for a new location as the climate around his ranch is cooking him down to a frazzel, just too hot and dry. Aside from a good market for poultry and eggs, he seemed to be more interested in a supply of water than any thing else. It seems that he has had to buy irrigated water and every drop had to be conserved. For instance, his drainage water from his water fountains was tiled out to citrus trees. I suppose that we waste enough water around here to supply a small orchard of citrus fruits.

August 24 — More running gears on today's auction and two coops of roosters. This live auction is on the up and up. It is only a question of time until it will be necessary to build an annex to the present building. There simply isn't enough room in the present plant for the increased business. The increase is by leaps and bounds, mostly bounds.

August 25—It sure does take a lot of crank case oil to saturate these floors. Part of the return load today was another barrel of oil. A dry cement floor absorbs far more than one would imagine. We apply it the easy way, just pour it on and then use an old broom as a mop. Nature takes her course in a couple of days. If there are any small puddles left Monday morning they will be swabbed dry with peat bale burlap. Then the burlap is burned immediately to eliminate a fire hazard. I don't know of anything else this burlap can be used for, as it is cut up in such small pieces.

August 26—Speaking of using byproducts and waste materials, the pine sticks that are on the peat bales make a good picket fence for sheep. We also use them for all kinds of repair work. They are sorted, and the big, heavy ones are stored away for future use. The culls are cut for kindling.

All the galvanized baling wire on the bales is saved. Several of the neighbors like to have it for repair work where binder twine won't hold the harness together. Every strand of the orchard fence was fastened to the steel posts. Of course there was not enough clips with the posts to do it, but we made our own clips from the galvanized wire on the peat bales.

August 28—It is beginning to look as if Kid White is going to do very little canning this season. This quick freeze, cold storage idea is not only much easier than canning, but we like the product better. Today she put in several bushels of sweet corn, for when our corn is ready it is ready right then. Some of today's produce was frozen on the cob, which means roasting ears in January. But the majority was cut off and frozen in cartons. We make several plantings of sweet corn, so that there may be a continual ripening all season.

August 29—Something picked off another pullet last night, and this means at least a couple more gray hairs in my head. Some folks say that it is an owl that is doing the dirty work, but I don't know. Frankly, I am worried. I have the idea that it is a wood's cat, one that has heeded the call of the wild. Traps apparently don't do any good for we don't know where to set them. We have tried that several times, using live birds for bait. Of course, we used ratty stock, but this type of varmit likes nice big, plump fresh birds.

August 30 — Replaced two water fountain tanks in the north house today. One of them had been soldered several times and the other was beginning to pit badly. I have been wondering if there isn't some kind of an acid condition set up by the particles of feed that accumulate from the beaks when the birds drink. Regardless of the cause, it is a fact that the tanks do pit out. The tank in the block house has been in use four years, and hasn't started to pit so far. But that tank is made of 18 gauge material, and that is heavy stuff. It is a good policy to change these tanks now instead of having to do it in zero weather.

August 31 — In just a few days Donnie will start back to school, and then the old man will be lonesome. Along about 4 o'clock I will start watching the road for the school bus, always with a feeling of relief when I see it. A fresh man on the job often lends vigor to the tired! Donnie has done all the young stock feeding this summer and gathered most of the eggs. I often wonder what I have done but I have been busy, too, when there wasn't so much corruption in the air. Looking back it seems that it has been a successful summer and while I will miss the boy, I am glad he lives in a country where he can go to school.

Eggs for School Lunches

The federal government, as you may know, has become the country's largest buyer of eggs. This year it will probably buy about two million cases.

You may wonder what the government will do with so many eggs.

They will be included in the free lunches that are served to school children who are undernourished and they will be distributed to people on relief.

Last year at schools where eggs were furnished regularly, each child got about a dozen eggs a month—less than they needed, but more than they otherwise would have had because most of these children come from families whose income is less than $750 a year.

People who have watched closely the reaction of these children tell me that most of the children to whom this free lunch is given seemed to be almost ravenous, especially on Mondays, but that by Thursdays they are sticking their apple or orange in their pockets to eat later or to take home.

This summer free lunches are being served on some of the public playgrounds and this fall they hope to feed six million children a free lunch every day. Six million youngsters can eat a lot of eggs! If you're ambitious you can figure out how many cases it would take to feed that many children an egg a day for two months.

There is no question that the government is saving itself future trouble by protecting the health of these children.

But you notice they are giving them their vitamins in food—not in pills. Maybe some of the rest of us could take a tip from this and be money ahead!

—Frank Priebe's Weekly Letter to Poultrymen, July 18, 1940, Copyrighted.

Bran As Chick Litter

Bran litter in a brooder house is satisfactory to G. A. Page of Sebastopol, Calif. Ordinary red bran is spread on the floor of the house in the area where the chicks brood during the period when they need heat. This makes a light litter, easily stirred and easily cleaned out when it gets dirty and causes no harmful effects if the chicks decide to consume litter.

—Pacific Rural Press.

Management of Hens in Laying Cages

By WILLARD C. THOMPSON

Condensed from a Bulletin

DURING the last few years, considerable public attention has been directed toward the individual cage system, or battery method of layer management. The basic principle involved is to make uniform the environment offered to laying hens, and to do so in such a way as to ensure maximum egg yields with minimum labor and costs, and to reduce losses to lowest possible figures.

The Department of Poultry Husbandry at the New Jersey College of Agriculture installed individual cages in the summer of 1934 for the purpose of studying the new method from the following 10 specific points of view.

(1) The significant differences between the cage management and floor management methods; (2) the apparent effects of close confinement upon the general health and production tendencies of individual hens; (3) the quality of eggs produced under such a system; (4) the cost of producing eggs under such conditions; (5) the sanitary efficiency of the scheme; (6) the effectiveness with which uniformity of feeding, watering, and general environmental conditions may be furnished; (7) the effects of close confinement upon the usefulness of such fowls as breeding stock, including observation of means of accomplishing poultry breeding under the cage system; (8) the possible economic justification for the overhead expenditure required in cage installation; (9) the labor involved, as well as costs and possibilities of economical labor assignment; (10) the durability or length of life of the cage equipment.

Limitations of Studies

It was possible during the time covered by these studies to work only with range-reared laying stock. Further, it was not possible to study the frequent replacement of stock and the keeping of the cage equipment fully populated throughout the year.

In the fall of 1934, 108 cages were available. A year later 54 more cages, and, at the end of the second year, 216 cages, were added making the total capacity of the laying cage room 378.

Two types of commercial laying cages were used. It was felt that they typified the mechanical devices offered on the market sufficiently to warrant the drawing of general observations and conclusions from their use.

During the four completed years, approximately 75 per cent of the layers used in the available cages were White Leghorns. An effort was made to ensure in the pullets placed

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in cages, a representative cross section of the general stock maintained on the plant. In each year about one fourth of the hens caged were of the heavier breeds, Rhode Island Reds, Barred Plymouth Rocks, or Red-Rock crossbreds.

The production year was started on October 1 each time. In these studies, all individual hens remained in the cages, irrespective of egg yield records, until they either showed permanent impairment of health or actually died.

In the cage system used, each individual compartment measured 15 inches wide, by 18 inches deep, by 18 inches high. Each cage was supplied with a wire bottom, a source of water and a feed hopper.

Throughout each of the winter seasons, the same 14-hour lighted day as that used on the floor-managed plant was put into operation in the cage room.

Report on Experience

This report on more than 4 years' experience is presented under the 10 points of inquiry already indicated. In general, the experiences of each of the 4 years were essentially parallel. This repetition of results served as one method of checking.

1. A close study of the cage method of layer management in comparison with floor management seems to warrant the following conclusions:

(a) Well-bred carefully reared stock tended to produce eggs at practically the same rate in the caged flocks as in the floor-managed flocks. It was noticed each year that, at the time of caging, the individual pullets used varied considerably. When separately caged, the weaker, smaller, less developed, immature and less bold pullets were given an immediate advantage over similar birds in floor managed flocks.

It is significant that throughout the duration of the project no zero-producers were found in the caged flocks. The cumulative effect of obtaining some production from the poorer birds prior to their being culled might be of economic importance on a large plant. It is also true that some of these weaker, less developed individuals, when individually caged, will develop into vigorous and productive layers. The simple placing of hens in individual cages cannot be expected to make up for deficiency in inheritance, however.

(b) For a part of the period of this project, the caged layers were fed on complete-ration pellets, and for the remainder of the project they were fed on recommended New Jersey laying ration (mash and grain mixed in equal parts by weight). Food consumption of fowls in cages was little different from that of fowls managed on the floor.

(c) It was perfectly possible to provide sufficient light, either natural or artificial, in the cage house so that the fowls could see to eat. It cost neither more nor less to light this house than the average floor house. From the standpoint of efficiency, a slight advantage seemed to hold in the cage house, as each fowl, being held in the same location within the room at all times, had a uniform degree of lighting throughout the year.

(d) Ventilation of the cage house offered no financial difficulties. Again, the uniformity of conditions in the cage house seemed to create a slight advantage. A unit room holding approximately 500 cages may be desirable in holding the expense of ventilation to a minimum. With this size of unit or smaller, simple means of cross-ventilation may be made to suffice, whereas, in very large units, electric fans or other artificial ventilation devices might be required.

(e) The cage method does appear to restrict the physical activities of the fowls. A close examination of post-mortem reports on fowls dying while caged revealed no case in which death or loss of health was due to a lowered amount of exercise. Perhaps some strains of fowls or even some breeds and varieties may adjust themselves to the restricted exercise of cages more readily and more satisfactorily than others.

(f) In sanitary potentialities, the cage scheme seemed to score definite advantages over the usual floor method. The cost of maintaining such sanitary environment was not found to be great, since the nature of the equipment materially aided in this regard.

Effects on Health and Production

2. Inquiries have been particularly interested in the possible cumulative effect of confinement on the individual hens which might be used for breeding purposes after having been caged. On the basis of the experiences of the two seasons, 1938 and 1939, it has been observed that in fertility, hatchability, and viability of chicks the caged breeders have been equal to floor-managed breeders. Such a project as this must be operated over a fairly long period of years before final conclusions may be drawn.

3. There is no evidence to indicate that the confinement of these hens has had any effect upon interior egg quality. The general exterior quality of eggs produced has been uniformly good. The shell quality from cage birds has been good. The percentage of cracked eggs gathered from cages has been approximately the same as from floor managed flocks. Generally speaking, therefore, the quality of eggs produced under the cage system has been found to be satisfactory and on a par with the experienced under well-managed floor conditions.

4. All things considered, it has been found that the production cost of a dozen table eggs under the cage

system will not be far different from that under good floor management.

Sanitation Excellent

5. The sanitary efficiency of the cage method appears to be relatively high. The ease with which the equipment can be cleaned and the low expense of the operation are favorable points. Usually, the cage equipment is cleaned and disinfected during summer or fall and again in spring. Neither the hens nor the eggs are in contact with accumulations of manure in a well-managed cage project. Cannibalism is an impossibility with caged hens. Perhaps one of the greatest advantages of the cage method is the economic as well as the sanitary effect of the absence of litter.

6. Little further need be said about the economic advantage of a system of layer management which will give each fowl unlimited, undisturbed, and equal opportunity to eat and drink. Some artificial heating of the cage room is needed, of course, in order to keep the water system from freezing.

7. This report does not pretend to cover the subject of the use of cages for the management of hens which are to be used for breeding purposes. A few preliminary observations may be included, however, since cage hens have been used in two breeding seasons. These hens have been managed in three different ways.

First, at the conclusion of the first laying year in cages, certain of these hens were placed in ordinary floor pens for their second laying year, during which they were bred in the usual manner. These hens which had lived in cages for the pullet year gave fertility, hatchability, and viability of chicks of essentially the same character as that shown by floor flocks.

The second method of handling cage hens as breeders consisted of using stud mating. Cage hens were placed in the stud pens about once a week through the breeding season. The eggs were incubated and the chicks were reared with average results.

The third method of handling cage hens as breeders consisted, during the spring of 1939, of employing artificial insemination. The preliminary results have been highly encouraging, an average of nearly 80 per cent fertility having been obtained.

It seems, therefore, to be quite possible to work out an economical and efficient scheme whereby cage hens may be used as breeders. This statement is not to be confused with the observation previously made that, after a long period of years, breeders may show cumulative effects of close confinement of the strain in succeeding seasons.

Under this item may also be enumerated two other interesting features of cage management. The method is an automatic trapnesting device, since the egg laid by each hen each day is unmistakably identified as gathered. Closely akin to this advantage is the fact that the system is an automatic culling device. Facts concerning each individual layer at hand daily, should enable managers using the cage system to eliminate unprofitable birds.

Cost Considerations

8. In the experience covered by this project, the additional overhead cost for cage equipment has been met by the operation of three factors of the method itself.

First, more layers may be efficiently confined within a given area of poultry house space under the cage system. An average room with an 8-foot ceiling probably can be made to confine between two and three times as many layers in cages. It is probable that better results will be obtained through the construction of specially designed buildings.

A second possible means of justifying increased initial expense may lie in increasing the number of layers which can be efficiently handled by one labor unit. From observations of actual labor spent on this project, it would seem that one labor unit might be made to take care satisfactorily of from one and one-half to two times as many layers as under the usual method.

The third factor is the possibility of keeping the laying house equipment fully populated with laying stock throughout the year. Average experience has shown that from 10 to 20 per cent of the laying flock will die during the year. If the places of fowls removed by death are not refilled, idle plant space and equipment begin to accumulate. The hatching and brooding of chicks every two months may be made to provide replacement of layers as needs arise through the year.

9. The nature of the labor required for the management of hens in cages is somewhat different from that required on the average floor plant. After the layers have been placed in the cages, the labor becomes a matter of routine feeding, watering, cleaning and egg gathering and recording. This might be an opportunity for the efficiency expert to lay out a method of labor management which would result in real economy and in reduction of costs.

10. The durability of the cage equipment cannot be dwelt upon until after the passage of several years. It seems probable, however, that the equipment used may have a length of life of at least 10 years.

General Observations

The foregoing report under the ten chosen points would seem to justify the following observations:

The laying cage, or battery system as it is popularly called, seems to introduce no management factors fundamentally different from those that have long been recognized as essential to satisfactory floor management of laying stock.

Inherently good stock, well reared, is equally important in both the old and the new methods of layer management.

The most important advantages of the cage method seem to include: (a) absence of litter, (b) automatic trapnesting and culling obtained, (c) avoiding of losses due to cannibalism, and (d) possibility of more systematic and orderly management.

The more serious disadvantages of the cage scheme may include: (a) initial cost of cage equipment, (b) cost of repair, deterioration, and replacement of equipment, (c) possible cumulative effect of close confinement in cages, and (d) possible failure to meet efficiently the needs of breeding plants.

This experience would seem to indicate that the cage system may have come to supplement or complement present existing methods of poultry farming rather than to replace them.

Production figures under this project have purposely not been given. To indicate, however, that the general results have been in line with average floor results, consider the production figures on 108 Single Comb White Leghorn pullets placed in cages for the first year of this project. During the year, the flock laid 15,581 eggs, or an average of 144.27 eggs per bird. These eggs actually sold for $515. The actual feed cost was $217.53. The balance between feed cost and egg value was $297.47. The net labor income for the flock was found to be $238.30, or $2.21 per bird. Of the original 108 birds, 45 were removed during the year either as mortality cases or culls.

Poultry and egg farm management has been subjected to many variations in past years. Most of these variations in management have not departed from basically sound principles, and therefore each of them has found adherents the country over. This present scheme of laying cage management follows in the train of earlier variations of poultry farming and, like them, seems to possess sufficient adherence to sound fundamentals to warrant careful investigation and interested study.

IN THE days before good soaps were manufactured, many strange preparations were used by beauty seekers in the hope of improving the complexion. Baths filled with milk and the juices of strange herbs were not unusual. According to legend, Roman gentlemen used to annoint themselves with crushed strawberries while the yolks of 100 eggs went into the bath tub of an early English aesthete.

—Lorraine L. Engel, U. S. Egg and Poultry Magazine, June 1940.

Broiler Production Costs

Review of a Delaware Survey

SIZE of the brood, amount of space allowed in brooding, efficiency in converting feed into meat, and time of marketing are among the factors which influence profits in broiler production, according to a survey conducted by R. O. Stelzer, H. L. Richardson, B. V. Carmean and Kenneth W. Baker, extension specialists of the University of Delaware.

Some 130 records, involving 590,916 chicks, were obtained from 99 broiler producers and then summarized. The study covered a period of only one year, so final conclusions cannot be drawn, but observations as to the effects of various management practices may be made.

In examining the tables, it is well to keep in mind that:

1. **Costs** represent the actual cash expenditures for chicks, feed, coal, etc., and a charge for labor, equipment, and all other items.
2. **Gross Returns** represent the total cash received for broilers, plus the value of broilers on hand at the close of the record period, plus the value of manure produced.
3. **Net Returns** represent the difference between Gross Returns and Costs.
4. **Labor Returns** represent Net Returns plus cost of labor.

Table 1 is self-explanatory, merely giving basic information that should be considered when studying other records. It indicates that the average net profit was 1.7 cents per pound of broiler sold.

In comparing different groups of chicks sold at various ages, it was revealed that, with an increase in length of feeding period, there was a gradual increase in mortality, decrease in labor return, increase in pounds of feed required per pound of broiler produced, and a definite correlation of weight of broiler with length of feeding period.

Quality of Feed Important

A study of the kinds of feed fed showed that the groups using the most expensive feed ($2.55 per 100 lbs.) had the largest returns, and indicated that kind and quality of feed may be more important than cost per pound, other things being

TABLE 1—Average Costs and Returns per Flock.

	Average
Number Chicks Purchased	4545
Number Broilers Sold	4087
Percent Died from All Causes	10.1
Average Number Weeks Fed	14
Average Cost per Lb. Sold (cents)	14.5
Weight of Broilers Sold (lbs.)	2.94
Lbs. of Feed Fed per Lb. of Broiler Sold	4.07
Price Rec'd. per Lb. for Broilers Sold (cents)	16.2
Labor Returns per 1,000 Chicks Purchased	$68.13
Labor Rets. per Week per 1,000 Chix Purchased	$4.87

Extension Service, University of Delaware, Newark, Delaware
(Broiler Cost Study—Delaware, 1939)

TABLE 2—Comparison of 130 Flocks Based on Amount of Feed Hopper Space per 100 Chicks After 3 Weeks of Age.

Feed Space per 100 Chix (ft.)	Total No. Flocks	Av. Age Sold (weeks)	Av. No. per Flock	% Died	Lbs. Feed Fed per Lb. of Broiler Sold	Av. Wt. Sold (lbs.)	Ret. per Wk. per 1000 Chix Purchased	Av. Cost per Lb. Sold (cents)
Under 4.9	33	13.7	3878	9.6	4.5	3.0	$4.74	15.3
5.0—5.9	21	13.7	4483	10.2	4.0	2.8	4.61	15.1
6.0—9.9	37	14.0	4845	12.4	3.9	3.0	5.24	13.5
10.0 & over	17	14.0	5282	9.8	3.5	3.0	5.08	13.3
Average (1)	130	14	4545	10.1	4.07	2.94	4.87	14.5

(1) Includes all records regardless whether feed space per 100 chix was shown or not.

equal. It was also shown that there may be a definite correlation between the nutritional value of feed and mortality.

Table 2 indicates that more feed space may improve the efficiency of feeding because fewer pounds of feed may be required for each pound of broiler sold. This would, in turn, reduce the cost per pound, which has a direct bearing on net returns.

Several important cost factors are listed in table 3. The 25 records with lowest pounds of feed fed per pound of broiler produced excelled in many items. They fed almost 2 pounds less feed for each pound of broiler sold; the mortality was more than 7 per cent less; although they sold their broilers at 13.6 weeks, as compared to 14.6 weeks for the other group, those sold earlier were heavier birds; they averaged 47 less birds per stove; feed space per 100 broilers was 1.5 feet more, and, although the price received per pound of broiler sold was less, the labor return per week per 1,000 broilers sold was $8.05 more.

TABLE 3—Comparison of 25 Flocks Having High Pounds of Feed Fed per Lb. of Broiler Sold with 25 Flocks Having Low Pounds of Feed Fed per Lb. of Broiler Sold.

	25 Records With Lowest Pound Feed Fed per Lb. Broiler Sold	25 Records With Highest Pounds Feed Fed per Lb. Broiler Sold
1. Range in lbs.	2.60—3.55	4.85—8.39
2. Average size of flock	5051	5975
3. Pounds Feed Fed per Lb. of Broiler Sold	3.28	6.25
4. % Died	8.6	15.7
5. Average Wt. Broiler Sold	2.88	2.74
6. Cost of Feed per Lbs. of Broiler Sold (cents)	7.0	11.2
7. Average Age Sold (weeks)	13.6	14.6
8. Price Received per Lb. Sold (cents)	16.3	17.1
9. Cost per Lb. Sold (cents)	12.8	17.09
10. Labor Returns per Week per 1,000 Chix Purchased	$8.54	$.049
11. Av. Sq. Ft. of Floor Space per Stove	303	296
12. Av. Broilers per Stove	466	513
13. Av. Feed Space per 100 Broilers (ft.)	5.5	4.0

Crowding Raises Costs

Results indicated that an increase of floor space per chick definitely increases the efficiency of production. Where .3 square feet of floor space per chick were available, the average cost per pound of broiler sold was 15.5 cents, while with 1.1 square feet of floor space per chick, the cost was 13.8 cents. It was noted that the broilers produced at a cost of 15.5 cents per pound also sold at 15.5 cents, definitely indicating that overcrowding can limit profits, even when other conditions are satisfactory.

The broilers produced at 13.8 cents per pound sold for 15.7 cents a pound, .2 cent per pound over what the first group sold for, and with a labor return of $7.28 per week per 1,000 chicks purchased as compared to $2.22 for the crowded chicks.

The data indicated that the most efficient number of chicks per stove would range between 300 and 500. When the number was increased above this amount, there was a definite downward trend in returns. The proper number of square feet of floor space per stove for most efficient production seems to be 200 to 300 square feet. When less than 200 or more than 300 square feet were allowed per stove, returns dropped.

Marketing Time Affects Returns

The importance of getting broilers on the market at the right time of year is pointed out in table 4. Birds sold during June and July brought by far the highest returns, in spite of the fact that some advantages were shown by birds marketed in

TABLE 4—Comparisons Based on Months Broilers Were Sold.

Month Sold	Av. Size Flock	% Died	Av. Cost per Lb. Sold (cents)	Av. Price Rec'd. per Lb. Sold (cents)	Av. Wt. Sold (lbs.)	Av. Lbs. Feed per Lb. Broiler Sold	Av. Labor Rets. per Week Per 1000 Chix Purchased	Av. Age Sold (weeks)	Av. Feed Space Per 100 Broilers
Jan.	5,505	8.5	14.2	15.6	3.1	3.9	$2.99	14.4	7.5
Feb.	3,061	7.5	15.4	15.3	2.8	4.2	1.80	13.9	4.6
Mar.	5,000	10.3	15.4	17.7	2.8	3.6	4.38	14.0	5.7
Apr.	5,988	8.9	14.7	16.3	3.1	4.2	4.84	14.5	2.8
May	6,001	10.4	12.6	15.0	3.0	3.8	4.03	13.8	4.2
June	5,670	13.0	12.8	16.1	2.9	4.1	9.20	13.4	4.5
July	1,995	4.9	13.0	17.7	2.9	3.6	9.66	13.0	6.0
Aug.	5,320	6.5	15.1	15.9	3.0	4.6	5.51	14.2	4.7
Sept.	800	21.8	15.3	17.7	2.5	3.9	5.71	13.0	3.5
Oct.	2,300	11.4	14.2	16.3	3.0	3.9	4.80	15.2	2.2
Nov.	3,605	6.9	14.8	16.8	2.6	4.0	5.37	13.4	2.1
Dec.	2,793	8.7	15.2	16.0	2.8	4.1	3.52	13.7	8.8
Av. (1)	4,545	10.1	14.5	16.2	2.94	4.07	4.87	14	6.3

(1) Includes all records regardless whether date sold was indicated or not.

TABLE 5—Comparison of 25 records showing highest labor returns per week per 1,000 chicks purchased and 25 records showing lowest labor returns per week per 1,000 chicks purchased.

	25 records with highest labor returns per week per 1000 chicks purchased.	25 records with lowest lab. ret. per wk. per 1,000 chicks purchased	Differences shown in the 25 high over 25 low.
General Summary			
Labor income per week (1,000 chicks purchased)	$9.04 to $20.23	+$.98 to −$15.00	
Av. No. chicks purchased	3,853	3,718	+135
Chicks died	6.71%	13.7%	−6.99%
Av. age sold, weeks	13.4	14.2	− .8
Av. Net Profit	$557.39	−$163.60	+$720.99
Av. ret. for labor per wk. (1,000 chicks purchased)	$ 11.45	−$ 1.94	+$ 13.39
Av. wt. of broilers sold (lbs.)	3.13	2.80	+ .33
Av. lbs. feed per lb. broiler sold	3.62	4.85	−1.23
Cost of feed per cwt.	$ 2.04	$2.25	− .21
Av. price received per lb. broiler sold	$ .166	$ .156	$.01
No. and Kind of Diseases:			
Cocc.	32%	32%	0%
Colds	20%	12%	+ 8%
Both Cocc. and Colds	24%	32%	− 8%
Indigestion	4%	....	+ 4%
Paralysis	....	4%	− 4%
Mycosis	....	4%	− 4%
B. W. D.	....	4%	− 4%
Big Eye roup	....	4%	− 4%
None	20%	8%	+12%
New Litter Added to Old:			
Yes	24%	64%	−40%
No	64%	32%	+32%
Not shown	12%	4%	+ 8%
Does Litter Get Wet:			
Yes	40%	24%	+16%
No	60%	76%	−16%
Does Moisture Condense on Walls:			
Yes	8%	24%	−16%
No	84%	60%	+24%
Not shown	8%	16%	− 8%
Average No. Chicks to Each Stove:			
1-4 weeks	473.8	501.3	−27.5
4-8 weeks	464.3	499.2	−34.9
after 8 weeks	459.5	497.1	−37.6
Average sq. ft. Floor Space per stove:	375.3	333.2	+42.1
Average Size of Yard per Stove:	671.9	898.8	−226.9
Age Fires Removed:			
3 weeks or less	12%	4%	+ 8%
4 weeks to 8 weeks	40%	20%	+20%
9 weeks to 12 weeks	28%	24%	+ 4%
13 weeks and over	....	12%	−12%
Alternate stoves after 10 wks.	....	8%	− 8%
When feathered	8%	4%	+ 4%
Depends on weather	8%	....	+ 8%
Never	4%	20%	−16%
Not shown	....	8%	− 8%
Birds Confined to House Full Period:			
Yes	24%	32%	− 8%
No	76%	64%	+12%
Not shown	....	4%	− 4%

other months. June marketed chicks had a mortality of 13 per cent, and brought only 16.1 cents per pound (as compared with March and September marketed broilers which brought 17.7 cents), but there were produced at 12.8 cents per pound, and showed a labor return of $9.20 per week per 1,000 chicks purchased.

Contrasting columns in table 5 afford an opportunity to make several comparisons between high and low labor return records, and suggest several questions that may be answered in further studies.

The difference betwen the average number of chicks purchased is not significant, but the variation in mortality may be of great importance. Much emphasis apparently should be placed on the mortality figures, as disease, litter handling, moisture condensation, number of chicks to each stove, square feet of floor space to each stove, and other factors are closely allied with mortality. It may be that mortality is of nearly as great importance as any other factor or, possibly, all other factors combined, in determining cost of production. Factors influencing mortality would also have a bearing on the age sold and weight of broilers, as growth is retarded by disease, crowding, and the like.

Crossbreeding and Broiler Growth

Experiments conducted by the University of Maryland have shown that crossbreeding stimulates growth and increases efficiency in broiler production, according to Dr. Morley A. Jull, head of the poultry department. He says that crossbred chickens produced by matings of Barred Plymouth Rock males and New Hampshire females required on the average three-quarters of a pound less of feed to produce a 3-pound broiler than either purebred Barred Rock or New Hampshire broilers.

The sires which produced the most efficient purebred progeny also produced the most efficient crossbred progeny. Most of the 10,000,000 broilers raised in Maryland last year were produced by matings of Barred Plymouth Rock males and New Hampshire or Rhode Island Red females.

The kind of males used is of the greatest importance in determining the efficiency of the broiler chicks in converting feed into poultry meat. Barred Plymouth Rock males used as breeders should be secured from strains which are quick-growing and rapid-feathering.

—News release from University of Maryland.

The Eggs the Baker Prefers to Use

By ALBERT W. LANTZ
American Bakers' Association
St. Louis, Mo.

Condensed from a Talk

WHEN nature designed the egg it not only made it one of the finest foods for human beings, but also gave it certain physical and chemical qualities particularly adapted to cake baking.

What are some of these peculiar qualities? The first is aeration, the quality of creating and maintaining air bubbles. These are the little bubbles that expand in the heat and raise the cake.

The second, we might say, is its pleasing and distinctive flavor and color. There is nothing to describe egg shade, with regard to other colors.

The third factor is the emulsifying qualities of the egg to make the cake batter smooth and homogeneous.

Eggs Give Cake Body and Form

Eggs are the toughening agent in cake. What do we mean by that? We bakers say that it gives the cake body and form. We mean that there is a certain tender springiness that feels good when we bite it and our tongue squeezes it against the palate. This is one of the principal functions of the egg in cake.

I was egg white beater at my house. Of course, I always got first lick at the batter bowl as a reward. I remember the platter of eggs and the amount of elbow grease it took. After I had beaten the eggs, I would call Mom for inspection. If she could invert that platter with the egg whites remaining on it, she pronounced it a perfect job. Then we would tiptoe around the kitchen—we didn't dare shake the floor because the cake would fall. Even with all those precautions some times Mom would say, "The cake fell on me."

Those eggs that Mother used in her cakes that fell did a perfect job; they did just what they are supposed to do today. First, they made large bubbles, then they became smaller and smaller until they were resilient and rubbery. But we kept beating and those eggs did the second thing they are supposed to do – they crystallized and became hard.

They set in their shape, so that when they went into the oven and the heat tried to expand them, they burst and the cake fell. Those little bubbles will stand a lot of punishment if properly handled. Let's stop beating the whites about half way their peak of tolerance and ready for the flour, sugar and the oven. They will expand to about twice their size, the heat coagulates them, and there we have the angel cake.

Presented at the Seventh World's Poultry Congress, Cleveland, Ohio, Aug. 2, 1939

The action is quite similar in yolks, except the bubbles are much smaller and firmer, the whipping slower. In the making of sponge and sunshine cakes we can add to the beaten yolks almost equal weight of flour, twice the sugar, an equal weight of milk, and, sometimes, if we need shortening, we use melted butter. It is surprising the amount of punishment taken by these little globules, and yet they do their work. The heat of the oven again expands them to about twice their size and brings out that tender rubberiness. That certain "pull" and "feel" and yolk flavor in ones' mouth that makes sponge cake so delightful.

Function of Egg Whites in Icings

In the making of icings, ladies know the peculiar functioning of the egg whites when you beat the eggs with sugar. Egg whites have another purpose. Have you ever noticed the crystallized shell on the outside of your icings, which takes away the stickiness and keeps the moisture and sweetness in the icing?

In icings where fats are used, we give them the name "butter cream icing." Of course, fats and egg whites don't like each other, so the egg floats on top of the icing making a protective "skin."

In making the light concoctions of sugar, shortening, and milk for fillings, we have a difficult job. Fats and moisture don't like each other, so here is where the egg yolk is the baker's friend. The lecithin of the yolks creates an affinity for these old enemies resulting in a light fluffy filling.

Eggs in Custards

In the many kinds of custards, perhaps eggs play the most important part. I have real custard in mind and not cornstarch pudding – the soft jittery kind where you look in the oven and don't think it will jell. You wonder how it will turn out, then all of a sudden the heat coagulates the eggs and the custard is set. However, in all these things, heat must be applied very slowly and gently, and the aeration step must always precede the coagulation stage.

I wonder how many of you are acquainted with the fluffy meringues on pie tops and the birds' nests or kisses? That is the name I like best because it describes these light concoctions of sugar and eggs that elusive "something" you can't describe. You take a bite and it disappears, then you come back for more. I think that is a very descriptive name. The peculiar thing about it is that by whipping we finish with about four times the volume of whites and sugar we started with.

Eggs in Cream Puffs

In the making of cream puffs, lady fingers, and shells, eggs play the part of the "tough guy." We boil together shortening, water and flour. After it is cooled slightly, we add the eggs, making a rather rubbery mass. The dynamite we use in this case is ammonium bicarbonate. The action is quite vicious. As the hot air and gasses try to expand the shell, the eggs put on the brakes. They are resilient, but they can still put on the brakes and prevent the shell from bursting. Finally, the gasses give up, the eggs win the tug-of-war, and we have that light, fluffy shell we call "cream puffs."

Large Bakers Use Frozen Eggs

What kind of eggs do bakers use? Small bakers still use shell eggs, although a great many of them are getting refrigerator units which give them the same opportunity to use frozen eggs which are used by the large, wholesale bakers. The largest percentage of the eggs used by bakers are in frozen form.

The hen is quite a seasonable bird. She lays her best eggs, largest eggs and greatest number in the spring of the year. Since the baker must have the best eggs possible, he must buy spring eggs. Since economically he must have the cheapest eggs possible, he again buys in the spring of the year.

What is the best form in which to retain this spring goodness and freshness? The most convenient form for the baker is, of course, the frozen form. In that manner he has a stock the year 'round of the finest Spring-laid eggs.

Eggs are Carefully Handled

I have visited many packing plants. Their cleaning is most ingenious. It is not cleaning with soap and water, as we think of it, but steam cleaning. Their equipment is made of baked enamel, steel, or stainless steel, because they must be constantly steamed and sterilized all day long. Even the air is air-conditioned; it is washed and chilled.

An egg with a dirty shell couldn't get in the place. They are sorted, candled, and graded. When the egg finally goes into the packing room, it is sound inside and clean outside.

You would be surprised at the ingenious equipment they have to make this work fool-proof. In a very few minutes these eggs are in sterilized cans in a freezer or very cold room to be frozen solid.

There are many styles of frozen eggs. Some are emulsified, homogenized, cut with fast moving wheels, some have sugar or salt added. There are many styles, but each has its use in the baking business. The peculiar thing about it is that the baker buys

The Secret of Frozen Eggs

The secret of frozen eggs is not only the fact that they are high quality eggs, but also in the freezing. If a can of eggs is frozen sharply and quickly from the outside in, then it is thawed slowly and gradually.

For a period of about 48 hours the working qualities of those eggs are definitely improved. You ladies are acquainted with the preparation of your cake batter where you set aside the yolks or the whites of eggs for later use. Have you noticed how much firmer those yolks beat after they have been set aside in a cold place, or how much more resilient is the foam in those egg whites? Freezing carries it to a greater extent.

With frozen eggs, the baker finds that he has everything for his convenience, and the working qualities of the best eggs make his work practically fool-proof.

High Quality Ingredients Used

I think that possibly it is our fault that some housewives have the erroneous opinion of bakers' cakes. In our plant the flour we use is the same kind that most of you women have on your pantry shelves. The butter we use is made by a firm widely known. The shortenings we use are the same that I know many of you have in your homes. Certainly, fine eggs are worthy of companions of like quality.

Results of an Egg a Day

They say that an egg a day for the ladies will give them that sylph-like figure, the stamina of the jitterbug, combined with that willowy grace of which they are all so desirous. They tell me that an egg a day gives a man the bulging muscles and that "something" he needs to carry on the great problems of the day.

Mothers are always desirous of the best things for their children. They say that an egg a day puts the gloss to the hair, a glint to the eye, and makes the children strong of wind and limb. I suggest that you give them that egg a day. But an egg a day the cake way and selfishly I suggest that it be in a baker's cake.

Cake combines the principal ingredients of food for mankind: cereal, butter, shortening, sugar, and milk. Cake contains more vitamins and a wider range of them than any single food in existence. Cake is a perfectly balanced ration. Certainly, anything composed of the main foods of mankind must be easily digestible.

◀◀ BABY CHICKS are poultry, in the opinion of Buffalo, N. Y., City Court Judge George L. Hager, and a defendant, Chester Myszka couldn't talk the judge out of that impression. Myszka, charged with selling poultry without a license, told the court that he did handle baby chicks, but that they were not poultry as they were sold as pets, not edibles. "Chicks are poultry," Judge Hager ruled, "and I don't care what pet names your customers call them."

VIEWS OF THE EDITORS

World Conflict

With no map for the world, business pursues an unchartered course. Few realized a year ago, when the World's Poultry Congress was in session in Cleveland, what the scope and implications of a world conflict would be. It is now plain that this is not a war in the ordinary sense. It is a world revolution, affecting not merely the geography of nations, but the fate of all the peoples of the earth. Its purpose is a new allegiance and a new way of life. The British did not fully see this until the capitulation of France, when it became plain that the totalitarian states fundamentally believe that the processes of democracy are evil and must be rooted out.

This is a serious aspect. It foreshadows an industrialized Europe, with 3½ times our population, under a strong central government. A united Europe, under the leadership of National Socialism, and using a common currency, would be difficult to sell to, and very difficult to trade against, in the markets of the world. A complete collapse of U. S. participation in world trade would give American isolationists isolation to their hearts' content. The Iron Age already reports that Germany is offering to sell steel in South America at 33% below U. S. prices, with a cash guarantee that delivery will be made by October.

The administration at Washington is gravely concerned about this situation. The President has sought a solution in a gigantic billion dollar inter-American trade monopoly for all agricultural and manufactured goods, aimed to combat Nazi barter, and give the U. S. a trade policy through regulation of all North and South American commerce with the rest of the world. This would imply new marketing quotas and marketing agreements, which would involve the specific application of new powers over agricultural production.

For long, the New Deal has aspired toward a managed economy, and war emergency, with its dislocations, provides the basis for new powers in terms of new plans and new programs for a controlled agriculture, both the control of crops and the fixing of prices. This scheme, enacted into law, will saddle tight crop quotas and rigidly fixed prices on U. S., and add to the national debt in financing other American nations. In Argentina, there is beef, wheat, and corn to sell. Europe, not U. S., needs their surplus. It would be impossible to dam that natural

current of trade. Argentina is now talking of increasing its chicken and egg production, to utilize some of its surplus feedstuffs, and supply poultry products to Europe.

—Frank L. Platt in The American Poultry Journal, August-September, 1940.

Housewives Want Better Tasting Eggs

Would city housewives like to have eggs graded as to freshness, size and color? Or are they satisfied with eggs that have been candled?

The Iowa Farm Bureau Federation, conducting a survey of consumer buying habits in Des Moines, found that 66 per cent of the housewives interviewed said they weren't satisfied with candled eggs and would like to have eggs graded.

But 81 per cent of the merchants replied that their customers were entirely satisfied with candled eggs.

We're inclined to take the housewives' word for it. But until merchants are convinced that customers want better eggs, farmers won't be helped much.

And even if both merchants and housewives say they want graded eggs, that demand won't do farmers any good unless they are prepared to market eggs that not only grade high on account of freshness, size and color, but also come from flocks that are fed a good ration.

We need more city families asking for an extra egg apiece at breakfast. To get that, the eggs have to be good.

—Wallace's Farmer, July 27, 1940.

Salt Stops Cannibalism

After proving the effectiveness of common salt in controlling cannibalism among flocks of quail on feeding experiments, research workers of the U. S. Department of Agriculture tried the same remedy on chickens. The results were exceedingly encouraging, says L. M. Black, New Jersey extension poultryman.

There is an old belief that salt is poisonous to chickens. However, moderate amounts of salt aid digestion, and experiments show that chickens can stand considerable salt for several days without permanent injury.

Only a small percentage of salt is needed. Standard diets usually contain about ½ per cent of added salt, and an additional 1 or 2 per cent added to the diet for 4 or 5 days usually stops cannibalism.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	June 1	July 1	June 1	July 1	Aggregate Jan.-July	June 1	July 1	Aggregate Jan.-July
North Atl.									
1929-38 (Av.)	96.9	82.4	77.4	54.8	48.3	319	45.1	37.5	279
1939	98.4	80.5	75.4	56.7	50.1	343	42.5	37.9	296
1940	97.2	80.2	74.2	57.0	50.8	339	45.9	37.8	292
E. N. Cent.									
1929-38 (Av.)	108.8	90.3	83.8	52.8	45.2	293	47.9	38.1	287
1939	107.3	87.9	81.6	54.8	48.0	318	48.3	39.4	305
1940	110.8	91.3	83.5	55.8	47.8	310	51.0	40.1	306
W. N. Cent.									
1929-38 (Av.)	118.8	99.8	91.8	50.6	42.2	270	50.4	38.6	288
1939	113.1	95.1	87.4	53.2	46.4	299	50.6	40.4	307
1940	118.6	102.4	92.1	54.0	46.3	288	55.2	42.6	313
South Atl.									
1929-38 (Av.)	58.9	48.2	46.9	46.0	40.6	282	21.9	18.9	147
1939	59.9	48.1	45.9	49.0	42.4	306	23.2	19.1	158
1940	59.9	51.2	47.1	49.2	43.0	296	24.7	20.0	160
South Cent.									
1929-38 (Av.)	65.0	51.4	49.4	45.3	38.4	274	23.2	19.0	156
1939	63.6	52.9	50.8	47.8	40.7	294	25.3	20.6	169
1940	65.8	52.4	49.4	47.7	42.1	277	24.9	20.7	159
Western									
1929-38 (Av.)	73.2	63.5	60.4	54.4	48.9	317	34.8	29.6	211
1939	72.6	60.3	57.7	53.6	48.4	329	32.6	28.1	213
1940	73.7	62.4	58.9	54.2	48.4	331	33.8	28.6	216
United States									
1929-38 (Av.)	84.5	69.7	65.6	50.4	43.2	286	34.8	28.0	214
1939	82.8	68.5	64.3	52.4	45.9	310	35.3	29.0	228
1940	85.1	70.8	65.3	53.0	46.2	301	37.1	29.8	226

Egg production during June was the largest for that month since 1930, totaling 11,069,000 cases. June production last year was 10,578,000 cases and the 5-year (1934-38) average 10,233,000 cases. The highest June production of record was 11,803,000 cases, in 1928. Present egg output was accomplished by 12 per cent fewer layers than in 1928, however.

The number of layers on hand during June averaged 269,000,000, or about 3.5 per cent more than in June last year, and 4 per cent above the 5-year (1934-38) average for June.

Heavy marketings of laying stock during June resulted from the continued low egg prices. The 4.5 per cent gain over last year shown on May 1 in number of layers, which had fallen to about 3.5 per cent by mid-June, was reduced to about 2 per cent on July 1.

The change in number of layers, as indicated by sample flocks on July 1, differs in the various geographic areas. The West North Central States have held their gain of about 5 per cent shown at the beginning of the year. The East North Central and South Central areas have lost part or all of their January gains and now show, respectively, only 2.4 per cent above and 2.8 per cent below last year's numbers. The South Atlantic area showed no increase in January, but has retained more of its layers and now has about 2.6 per cent more than a year ago. The two important commercial egg producing areas on the East and West Coasts remain unchanged. The Far West still holds its increase of about 2 per cent and the North Atlantic its decrease of about 2 per cent.

The rate of egg production during June exceeded the June rate of every other year in the 1925-39 record, except in 1938.

Hens are thus continuing their high seasonal rate of lay shown during the past three years. The July 1 production rate remained high, being 7 per cent above the 10-year (1929-38) average production per hen for July 1, and 0.7 per cent higher than last year, but about 0.7 per cent lower than the record high July 1 production rate in 1938.

This is the second month to show a slight gain in the production rate over last year, following the four months of unfavorable weather in the late winter and early spring in which the production rate was lower than last year. June weather and feed conditions were rather favorable for the country as a whole, and the seasonal drop in egg production was slightly less than the average seasonal decline for June.

The July 1 production rate was greater than the 10-year July 1 average in all sections of the country except the Far West. Compared with July 1 last year it was higher in the North Atlantic States and the South, but lower in both the East and West North Central areas, and unchanged in the Far West.

—Comment from U.S.D.A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

The trend of egg markets during July was somewhat of a surprise to many in the egg trade. Changes in prices and marketings and, to some extent, in storage movements, were different from what had been generally anticipated. The Government purchase program, at all times a part of the picture, continued to be an important influence, although the quantities taken were greatly reduced, as compared with previous months. The relatively heavy supplies of eggs reaching terminal markets, the Agricultural Marketing Service reports, probably reflected in part the large

Receipts of Eggs (Cases) at 4 Markets*

Geographic Section	June 1940	June 1939	June % change	Jan. to June, Inc. 1940	Jan. to June, Inc. 1939	Jan. to June, Inc. % change
New England	31,540	26,011	+ 21.3	270,934	212,702	+ 27.4
Middle Atlantic	203,756	193,232	+ 5.4	1,294,259	1,201,839	+ 7.7
South Atlantic	22,226	21,955	+ 1.2	182,713	194,343	− 6.0
East North Central	363,266	309,993	+ 17.2	2,078,426	1,962,089	+ 5.9
West North Central	923,492	904,690	+ 2.1	5,129,266	5,250,079	− 2.3
South Central	6,446	1,752	+267.9	71,831	52,709	+ 36.3
Mountain	22,215	29,089	− 23.6	216,699	160,271	+ 35.1
Pacific	21,032	25,874	− 18.7	256,083	136,689	+ 87.3
Miscellaneous	906	484	+ 87.2	3,237	3,234	+ 0.1
TOTAL	1,594,879	1,513,080	+ 5.4	9,503,348	9,173,955	+ 3.6

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic Section	June 1940	June 1939	June % change	Jan. to June, Inc. 1940	Jan. to June, Inc. 1939	Jan. to June, Inc. % change
New England	1,814,654	2,392,212	− 24.1	5,835,607	6,222,330	− 6.2
Middle Atlantic	6,293,673	6,557,120	− 4.0	20,288,741	17,226,143	+ 17.8
South Atlantic	2,259,654	1,722,295	+ 31.2	12,971,518	8,721,027	+ 48.7
East North Central	2,795,934	3,836,537	− 27.1	18,028,715	18,675,746	− 3.5
West North Central	12,451,343	10,687,008	+ 16.5	66,890,494	53,066,360	+ 26.1
South Central	1,217,388	1,553,938	− 21.7	10,232,499	11,697,669	− 12.5
Mountain	196,351	194,535	+ 0.9	2,882,028	1,970,496	+ 46.3
Pacific	395,197	928,014	− 57.4	9,134,700	4,318,632	+111.5
Miscellaneous	57,680	–	–	128,680	–	–
TOTAL	27,481,874	27,871,659	− 1.4	146,392,982	121,898,403	+ 20.1

* New York, Chicago, Philadelphia, and Boston.

June production—a production 5 per cent above that of June last year and the biggest for the month since 1930.

Receipts have been relatively heavy through the summer, but more particularly so during the latter half of July. While seasonal decreases are now the general rule, receipts continue to be larger than a year ago. For the month of July, the increase over last year will probably be about 3 per cent, but for the last half of the month alone, it will likely be greater than 10 per cent. Receipts of eggs at Central Western packing plants during the week ending July 20 were 39 per cent greater than the corresponding week of last year. Pacific Coast packing plant receipts, however, are now only slightly greater than a year ago.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
July 6	33	26,710	−9.71	+ 9.71
July 13	26	23,417	+3.96	+ 7.46
July 20	27	24,182	+1.64	+15.71
July 27	24	21,206	+2.66	+14.84

—Compiled from U. S. D. A. market reports.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1940	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1940	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1940	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) % Chg.
July 6	125,251	108,551	+15.38	3,151	2,569	+22.65	814	848	− 3.99	2,178	1,581	+37.75
July 13	135,585	110,675	+22.51	3,029	3,230	− 6.20	831	1,231	−32.45	1,842	1,880	− 2.04
July 20	126,466	91,261	+38.58	3,322	3,949	−15.87	1,101	1,451	−24.07	2,061	2,347	−12.17
July 27	115,965	81,478	+42.33	3,658	3,889	− 5.93	1,382	1,556	−11.17	2,152	2,164	− 0.56

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	Cases of Eggs No. of Plants	Cases of Eggs 1940	Cases of Eggs 1939	% Change from Previous Week	% Change from Last Year
July 6	60	56,647	52,644	−7.07	+ 7.60
July 13	60	57,067	50,280	+0.74	+13.50
July 20	60	53,612	51,880	−6.05	+ 3.34
July 27	60	50,673	48,775	−2.66	+ 3.89

—Compiled from U. S. D. A. market reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	Avg. Egg Price per Doz. (Dollars) 1940	1939	1938	Avg. Feed Cost per 100 lbs. (Dollars) 1940	1939	1938
July 5	8.7	7.5	6.5	.21	.228	.264	1.82	1.71	1.70
July 11	8.0	7.5	6.1	.231	.223	.285	1.84	1.68	1.73
July 18	8.3	7.5	6.1	.224	.222	.281	1.86	1.64	1.71
July 26	9.1	6.9	6.7	.208	.23	.274	1.89	1.59	1.69

—Compiled by N. Y. State Dept. of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration 1940	1939	10-Yr. Avg. 1929-38	Price of Fresh Graded Firsts (Dollars) 1940	1939	Cost of Ration per 100 lbs. (Dollars) 1940	1939
July 6	7.34	6.61	6.79	.159	.152	1.17	1.00
July 13	7.45	6.37	6.84	.158	.152	1.18	.97
July 20	7.57	6.05	6.92	.158	.152	1.19	.92
July 27	7.61	5.76	6.75	.157	.152	1.19	.87

—Compiled from U. S. D. A. market reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	1937	1936	1935
June	9.32	8.27	7.24	10.16	6.89	6.72
January-June	9.70	7.70	8.08	9.95	7.49	7.51
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

The trend of egg prices in early July was upward on all grades. About the middle of the month, however, it became evident that supplies were not clearing well in Eastern markets. Floor stocks in the four markets were 73,000 cases on July 8, but the following week they were in excess of 90,000 cases. Storage stocks also increased during this period. In addition to heavier receipts, additional reasons advanced for slow clearances were the higher retail prices in effect, the hot weather, and the effect of vacation periods on regular distribution.

Purchases of eggs by the Surplus Marketing Administration during July were approximately 160,000 cases, a third of which were bought on the mercantile exchanges, the balance being on direct offers. Purchases through July 31 included 23,074 cases on the New York Mercantile Exchange, and 29,614 cases on the Chicago Mercantile Exchange. On offers: Northeastern States, 20,330 cases; Midwestern States, 85,071 cases; Southwestern States, 1,600 cases, Pacific Coast States none. July purchases represent a material reduction under previous months, for in May and June, an aggregate total of approximately 1½ million cases was taken. Considerable quantities of these eggs are still in storage, pending ultimate distribution through relief channels.

Wholesale prices of eggs bear widely different relationships to a year ago, depending upon grade. In general, the prices of better quality grades are below a year ago, while prices of average run eggs are higher. Thus, while Mixed Color Firsts at New York are now ½ cent higher than in July 1939, Nearby White Specials will average about 1½ cents lower, and Pacific Coast Specials at New York 1 cent lower. These changes have brought narrower differentials between some grades than those of a year ago. For the entire month of July this year, Mixed Color Firsts will average about 5 cents below Nearby White Specials, whereas a year ago, the difference between the same two grades averaged 7½ cents. Prices of practically all grades stiffened toward the middle of July, but in most cases, these gains were later lost. The principal exceptions to this are Pacific Coast eggs, both in Eastern markets and on the Pacific Coast proper. In Pacific Coast markets, prices have held at the higher levels gradually reached as the month advanced.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

1940 Egg Prices at New York City

Kind	July 5	July 12	July 19	July 26	June 26, '39
Mixed Color Firsts	17¼	17¾	17¼	17¼	16¼
Nearby and Midwestern White Premium Marks	23½-26	23½-26	21½-24	20½-23	24½-27
Nearby and Midwestern White Specials	23	23	21	19½-20	24
Pacific Coast Specials	28¼-28¾	28½-29	27½-28	27½-28	28-29½
Nearby and Midwestern Brown Exchange Specials	20½	21½	20	19½-20	22½-23

Mid-Month Farm Prices of Eggs Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	19.9	23.2	26.2	30.1	28.8
1938	21.6	16.4	16.2	15.9	17.6	18.2	19.9	21.0	24.9	27.1	29.0	27.9
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4						

Eggs in Storage

Storage Holdings of Eggs

Kind	July 1 5-Year Avg. 1935-39	July 1 1939	June 1 1940	July 1 1940	% Change July '39-July '40
		(Thousands)			
Shell Eggs (cases)	7,287	6,977	5,980	7,509**	+7.6
Frozen Eggs (lbs.)	132,892	141,456	123,793	150,207	+1.9
Frozen Case Equivalent (cases)*	3,797	4,042	3,537	4,292	+6.1
Total (cases)	11,084	11,019	9,517	11,801	+7.0

* Frozen eggs are converted on the basis of 35 lbs. to the case.

** Includes 932,865 cases owned by The Surplus Marketing Administration for relief distribution.

Cold storage stocks of eggs on July 1 were 7,509,000 cases, compared with 6,977,000 cases a year earlier, and a 1935-39 average of 7,287,000 cases. The current year's July 1 stocks included 933,000 cases owned by the Surplus Marketing Administration and held for relief distribution, so that commercial stocks were only about 6½ million cases. On this basis, commercial stocks on July 1 were almost a half million cases less than on July 1, 1939. Since July 1, eggs have continued to move into storage at a fairly rapid rate, and by July 27, holdings in the 35 cities, where approximately three-fourths of total U. S. stocks are stored, were reported at 5,950,000 cases, including 992,000 cases belonging to Surplus Marketing Administration and relief agencies. It may be assumed from these figures that by August 1, U. S. stocks will be about 10 per cent greater than the 7,024,000 cases on hand a year earlier, but that the total will include in the neighborhood of a million cases which will be non-commercial. It appears unlikely, however, that commercially-owned stocks of shell eggs will show as great a reduction under a year earlier as was the case on July 1.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

Poultry Meat Prices

Mid-Month Farm Prices of Chickens Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	14.9	15.2	14.6	14.1	13.6
1938	16.7	16.0	15.9	16.2	16.1	15.7	15.0	14.2	14.3	13.6	13.6	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3						

Dull trading featured live poultry markets during most of July. Marketings at Central Western packing plants increased somewhat during the latter part of the month, but for the two weeks ending July 20 were reported by the Agricultural Marketing Service to be considerably lighter than those of last year. Young stock now constitutes about a third of total receipts, and sharp seasonal increases of this class have occurred, current arrivals being about double those of six weeks ago. Compared with July 1939, however, receipts are fully 25 per cent lighter. Prices of fowl strengthened slightly toward the middle of July, then lost most of the gain. Broilers and spring chickens shared in a similar advance, although under later weakness, prices of these classes of stock tumbled, and now average several cents lower than at the beginning of the month. Compared with a year ago, prices of live poultry are slightly higher.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	July 1 5-Year Avg. 1935-39	July 1 1939	June 1 1940	July 1 1940	% Change July '39-July '40
	(Thousand Pounds)				
Broilers	5,567	6,722	3,635	4,826	− 28.3
Fryers	2,747	3,395	2,163	1,762	− 48.2
Roasters	7,055	7,821	6,199	4,606	− 41.2
Fowls	10,171	13,683	11,821	16,193	+ 18.3
Turkeys	15,547	17,373	40,207	36,739	+111.4
Ducks	4,248	4,931	2,252	5,006	+ 1.6
Miscellaneous	12,300	13,545	8,528	10,619	− 21.6
Unclassified			2,099	2,638	
Total	57,635	67,470	76,904	82,389	+ 22.1

June receipts of dressed poultry were 1.4 per cent less than those of June 1939, this being the first month in 1940 that receipts had dropped below those of the comparable period of the previous year. The July situation is just about the same. For the calendar year to date, receipts exceed those of last year by 22 million pounds, which is a 15 per cent increase. This may partly explain the increased supplies of frozen poultry now on hand. Holdings July 1 were 82 million pounds, compared with 67 million pounds a year earlier and a 5-year average of 57½ million pounds. Weekly storage movements during all of July have shown declines although in the 35 cities, the change between July 1 and July 27 was less than a million pounds. This is only about half of last year's reduction, and is less than the average July change. Stocks continue much heavier than they were in 1939, with prospects of an August 1 relationship with last year not greatly different from that of July 1.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During June			Salable Chicks Hatched During June			Chicks booked July 1 for July or later delivery			
		1939	1940	% chg.	1939	1940	% chg.	No. of Plants	1939	1940	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	12	1,164	1,323	+14	672	681	+ 1	6	1,424	1,265	−11
Mid. Atl.	24	438	637	+45	607	650	+ 7	13	148	138	− 7
S. Atl.	28	873	1,037	+19	704	809	+15	12	414	421	+ 2
E. N. Cent.	76	1,936	1,847	− 5	2,456	2,527	+ 3	30	198	384	+94
W. N. Cent.	84	1,576	1,799	+14	2,682	3,289	+23	15	241	173	−28
S. Cent.	14	185	287	+55	288	392	+36	5	36	57	+58
Mountain	14	178	162	− 9	334	337	+ 1	4	27	10	−63
Pacific	24	634	594	− 6	500	454	− 9	19	489	618	+26
U. S.	276	6,984	7,686	+10	8,243	9,139	+11	104	2,977	3,066	+ 3
Jan.-June Inc.		144,646	131,453	− 9	99,078	87,404	−12		73,863	62,872	−15

Reports from 276 hatcheries, having a combined capacity of 39,174,000 eggs, indicate 11 per cent more chicks hatched during June 1940 than in June 1939. June is the first month this year in which the production of chicks has shown an increase over the production of the same month last year. The cumulative production of hatchery chicks for the first 6 months of 1940 is apparently 12 per cent smaller than that of the corresponding months of last year. Hatcheries have reported a cumulative production through June of 87,404,000 chicks, compared with 99,078,000 chicks a year earlier.

The increase noted in June is the result of the improvement in broiler prices in relation to grain prices which started during the latter part of April. When this improvement began to take place, broiler producers who up to that time had raised fewer broilers this year than last, started buying chicks for immediate delivery as well as placing advance orders for delivery in June and later. On June 1, hatcheries reported an increase of 14 per cent in the number of chicks booked over the same date a year earlier. The rapid response of hatcheries in increasing the June production above that of a year earlier, shows clearly how well and how quickly the hatchery industry can respond to changes in the demand for chicks.

Increased chick production over June of last year was indicated for all of the principal geographic regions with the exception of the Pacific Coast States where a decrease of 9 per cent was reported. This decrease, however, is much less than has been reported by the Pacific Coast States during previous months. Production in the South Central States was 36 per cent larger than that of June last year and in the West North Central States 23 per cent larger. Production was also substantially larger in the South Atlantic States and Middle Atlantic States where increases of 15 per cent and 7 per cent, respectively, were reported. The East North Central States, however, reported an increase of only 3 per cent over June last year, and the New England and Mountain States, 1 per cent.

An increase of 10 per cent over a year earlier in the number of eggs set was indicated for June. The Middle Atlantic and South Central States reported increases of 45 per cent and 55 per cent, respectively. Other increases ranged from 14 per cent in the New England and West North Central States to 19 per cent in the South Atlantic States. In the remaining sections, fewer eggs were set this year than last. The East North Central States reported a decrease of 5 per cent, the Mountain States, 9 per cent and the Pacific Coast States, 6 per cent.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		June 1940	June 1939	Jan. to June, Inc. 1940	Jan. to June, Inc. 1939
Eggs in shell	(doz.)	312,308	213,059	2,712,255	1,270,627
Eggs and Yolks, frozen, dried or canned	(lbs.)	7,477	Not available	91,118	Not available
Live Poultry	(lbs.)	6,308	11,207	71,995	113,628
Dressed Poultry	(lbs.)	178,006	368,444	720,262	1,163,889

Imports of Eggs and Poultry

Eggs in shell	(doz.)	19,959	19,821	110,546	169,245
Whole Eggs, dried	(lbs.)	0	0	28,250	32,000
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	243,450	53,400	885,926	97,925
Yolks, frozen	(lbs.)	0	0	0	25,330
Egg Albumen, dried	(lbs.)	27,000	20,000	159,400	299,983
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	200,463	65,925	573,317	371,423
Dressed Poultry	(lbs.)	147,896	2,193	280,321	112,562
Poultry, prepared	(lbs.)	15,429	42,669	222,330	564,324

Egg Breaking Operations

Egg Breaking Operations During June, 1940

Commodity		Quantities reported to date for June 1940	Same Firm Comparison		
			June 1939	June 1940	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		5,238,487	5,521,626	5,238,487	– 5
Mixed eggs (plain)		2,422,411	2,013,232	2,422,411	+20
Mixed eggs (emulsions, also with sugar, salt, etc.)		5,194,360	4,574,121	5,194,360	+14
Egg whites (all descriptions)		8,804,504	7,316,734	8,804,504	+20
Egg yolks packed	Without salt, sugar, etc.	3,063,651	2,510,084	3,063,651	+22
	With sugar	2,406,187	2,335,276	2,406,187	+ 3
	With salt	875,090	592,387	875,090	+48
	All yolk emulsions, including glycerine	28,020	0	28,020	–
Total—pounds		28,032,710	24,863,460	28,032,710	+13
Total—case egg equivalent		800,935	710,385	800,935	
Number of firms reporting*		44	44		

* Firms, not plants. Some firms operate more than one plant.

A FOUR-LEGGED chick and a four-legged turkey poult were hatched in San Leandro, California, and Lexington, Kentucky, a few weeks ago. The chances for such hatchings are estimated at about one out of 5 million.
—Journal of the American Veterinary Medical Assn., August, 1940.

A STRAY alley cat recently walked into a Bloomington, Illinois, hatchery, took a liking to the chicks being raised there, and adopted 24 of them. When one of the chicks gets out of its box, the cat immediately picks it up and puts it back. She licks them to keep them clean.
—Journal of the American Veterinary Medical Assn., August, 1940.

GOOD AUTHORITIES claim that the common house wren feeds its young as often as a thousand or more times in a single day.
—Journal of the American Veterinary Medical Assn., August, 1940.

RESULTS OF LAYING TESTS

As the 16 standard egg laying tests enter the tenth month of the 1939-40 trial run, J. A. Hanson's Leghorns at Storrs seem more determined than ever to get the blue ribbon for best performer of the year. This 13-bird team topped all other pens during June with 340 eggs and 368.80 points, and is leading to July 1 by 235 points over its closest rival.

Practically tied for second place are Parmenter's Reds at Rhode Island and Hanson's second Leghorn pen at Storrs. Just 20 points behind these pens is H. J. Hardin's team of Rhode Island Reds at Georgia. Horseshoe Poultry Ranch's White Leghorns at Texas have jumped into fifth highest position.

With the heat beginning to tell on the heavier birds, White Leghorns are jumping ahead now. Twelve of the leading pens in the 16 tests for June were Leghorns.

E. B. Parmenter's leading Red hen at Rhode Island is still setting the pace among all individuals, but Hanson's heaviest producer at Storrs is less than a point behind and has five more eggs to her credit. The Red hen has 265 eggs and 289.40 points through the 274 days thus far.

Eben Wood's New Hampshires at Storrs continue to rank number one team in that breed. Thomas Mettler's pen at Pennsylvania, however, has moved up to within 28 points of the leaders. Fight for first place in Barred Rocks is between Cobb's pen at Storrs and Amidon's pen at Pennsylvania. Riley Poultry Farm has the White Rock situation in hand.

Twenty Highest Pens in All Breeds to July 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3125	3283.25	Storrs
E. B. Parmenter	Rhode Island Red	2804	3047.45	Rhode Island
J. A. Hanson	White Leghorn	2881	3046.75	Storrs
H. J. Hardin	Rhode Island Red	2857	3028.70	Georgia
Horseshoe Poultry Ranch	White Leghorn	2917	2994.35	Texas
Wm. L. Gilbert Home	White Leghorn	2828	2988.05	Storrs
Thomas Mettler	Rhode Island Red	2855	2981.95	Hunterdon, N. J.
Erath Egg Farm	White Leghorn	2800	2968.40	Texas
R. W. Anderson	Rhode Island Red	2792	2949.50	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	2751	2947.35	Passaic, N. J.
To-Lani Farm	Rhode Island Red	2936	2945.40	Georgia
Norman W. Amidon	Barred Rock	2846	2945.20	Pennsylvania
George M. Heberer	White Leghorn	2818	2929.95	Texas
R. C. Cobb	Barred Rock	2821	2919.95	Storrs
E. B. Parmenter	Rhode Island Red	2677	2879.35	New York State
Guy A. Leader	White Leghorn	2754	2877.35	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	2816	2870.65	Passaic, N. J.
W. C. Mullins	Rhode Island Red	2714	2862.75	Texas
George A. Pearce	White Leghorn	2715	2855.60	Hunterdon, N. J.
Thomas Mettler	Rhode Island Red	2728	2853.30	Passaic, N. J.

High Pen in Each Standard Test to July 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3125	3283.25	Storrs
E. B. Parmenter	Rhode Island Red	2804	3047.45	Rhode Island
H. J. Hardin	Rhode Island Red	2857	3028.70	Georgia
Horseshoe Poultry Ranch	White Leghorn	2917	2994.35	Texas
Thomas Mettler	Rhode Island Red	2855	2981.95	Hunterdon, N. J.
Alampi Poultry Breed. Farm	Rhode Island Red	2751	2947.35	Passaic, N. J.
Norman W. Amidon	Barred Rock	2846	2945.20	Pennsylvania
E. B. Parmenter	Rhode Island Red	2677	2879.35	New York State
E. B. Parmenter	Rhode Island Red	2709	2845.00	Western New York
Ford's Riverbank Farm	Rhode Island Red	2709	2805.65	Maine
W. C. Eckard	White Leghorn	2636	2802.55	Michigan
Pinebreeze Farm	White Leghorn	2628	2741.60	Florida
Robert Chapman	Rhode Island Red	2589	2709.45	Oklahoma
A. E. Danish	White Leghorn	2565	2661.35	Central New York
Missouri Valley Hatchery	Rhode Island Red	2491	2654.50	Missouri
W. A. Seidel	White Leghorn	2395	2506.30	Arizona

High Pen in Each Standard Test for June

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	340	368.80	Storrs
Aseltine Poultry Farm	White Leghorn	328	355.60	Michigan
Horseshoe Poultry Ranch	White Leghorn	331	354.25	Texas
J. J. Warren	Rhode Island Red	318	344.00	Western New York
Lone Oak Leghorn Farm	White Leghorn	332	341.70	Florida
G. A. Robertson & Son	White Rock	312	339.75	Central New York
Thomas Mettler	White Leghorn	308	331.80	Hunterdon, N. J.
Lone Oak Leghorn Farm	White Leghorn	313	326.90	Georgia
Martin Schubkegel	White Leghorn	313	322.90	Passaic, N. J.
Glendale Poultry Farm	Rhode Island Red	295	322.45	Rhode Island
Roscoe Hill Hatchery	White Leghorn	291	315.75	Missouri
Raymond Potter	Rhode Island Red	297	313.55	Maine
F. J. Stumpf	White Leghorn	303	312.90	New York State
Missouri Valley Hatchery	White Leghorn	293	306.30	Pennsylvania
Elk City Hatchery	White Leghorn	289	301.80	Oklahoma
P. S. Dickey	White Leghorn	304	301.25	Arizona

High Pen in Each Breed to July 1—(274 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3125	3283.25	Storrs
E. B. Parmenter	Rhode Island Red	2804	3047.45	Rhode Island
Norman W. Amidon	Barred Rock	2846	2945.20	Pennsylvania
Eben Wood	New Hampshire	2626	2852.15	Storrs
Harvey E. Taylor	White Wyandotte	2598	2618.15	Texas
Riley Poultry Farm	White Rock	2523	2617.90	Oklahoma
R. S. Thomas	Ancona	2319	2306.65	Pennsylvania
Laclede Hatchery	Black Australorp	2148	2119.40	Oklahoma
E. J. Covey	Black Minorca	2036	2112.20	Texas
T. D. Brown	White Minorca	1843	1929.20	Texas
Raymond Murphy	White Giant	1795	1900.10	Missouri
Lindstrom Poultry Farm	Buff Minorca	1937	1859.70	Texas
Harry Phillips	Columbian Rock	1631	1742.00	Missouri
Famous Poultry Farm	Leghorn Cross	1552	1549.05	Georgia
Cedarlaid Poultry Farm	Brown Leghorn	1761	1525.20	Florida
Iowa Master Breeders	Buff Orpington	1413	1499.05	Missouri
Charles C. Ward	Buff Leghorn	1505	1497.90	Oklahoma
S. E. Raymond	Lamona	1373	1453.60	Storrs
R. L. Jones	Light Brahma	1099	1163.05	Hunterdon, N. J.
Walter Dobe	Barnevelder	923	982.40	Western New York
Daniel S. Riker	Buff Rock	396	364.45	Maine

High Hen in Each Breed to July 1—(274 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	265	289.40	Rhode Island
J. A. Hanson	White Leghorn	270	288.70	Storrs
George A. Pearce	New Hampshire	254	271.00	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	253	264.40	Pennsylvania
Earl C. Dunham	White Rock	238	258.20	Georgia
T. D. Brown	White Minorca	232	253.40	Texas
Harvey E. Taylor	White Wyandotte	238	243.90	Texas
Ben G. Monroe	Ancona	218	222.45	Georgia
Famous Poultry Farm	Leghorn Cross	215	219.10	Georgia
Norman Stansfield	Black Australorp	194	211.20	Rhode Island
E. J. Covey	Black Minorca	192	207.35	Texas
Hillview Poultry Farm	White Giant	196	203.05	Texas
Iowa Master Breeders	Buff Orpington	188	201.85	Missouri
Harry Phillips	Columbian Rock	180	195.20	Missouri
R. L. Jones	Light Brahma	178	190.10	Hunterdon, N. J.
Henry F. Waitt	Buff Minorca	173	186.15	Maine
S. E. Raymond	Lamona	170	179.55	Storrs
Charles C. Ward	Buff Leghorn	152	157.40	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	177	153.35	Florida
Walter Dobe	Barnevelder	126	136.70	Western New York
Daniel S. Riker	Buff Rock	100	105.75	Maine

High Hen in Each Standard Test to July 1

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	265	289.40	Rhode Island
J. A. Hanson	White Leghorn	270	288.70	Storrs
W. A. Seidel	White Leghorn	267	282.75	Texas
Booth Farms and Hatchery	White Leghorn	261	280.10	Georgia
George A. Pearce	Rhode Island Red	259	279.05	Passaic, N. J.
Booth Farms and Hatchery	White Leghorn	258	278.25	Florida
Thomas Mettler	Rhode Island Red	257	275.05	Hunterdon, N. J.
J. O. Coombs and Son	White Leghorn	251	271.70	Oklahoma
Ford's Riverbank Farm	Rhode Island Red	246	268.35	Maine
H. Guy Loose	White Leghorn	245	268.35	Pennsylvania
Nelson's Leghorn Breed. Farm	White Leghorn	247	263.70	Arizona
J. A. Hanson	White Leghorn	251	262.90	Western New York
Ford's Riverbank Farm	Rhode Island Red	242	262.90	Missouri
J. J. Warren	Rhode Island Red	239	258.10	Michigan
E. B. Parmenter	Rhode Island Red	235	255.60	New York State
Holser's Valley Farm	White Leghorn	235	251.50	Central New York

High Hen in Each Standard Test for June

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	30	33.00	Storrs
Creighton Brothers	White Leghorn	30	33.00	Central New York
Foreman Poultry Farm	White Leghorn	30	33.00	Western New York
Booth Farms and Hatchery	White Rock	30	33.00	Texas
Cane Poultry Farm	Rhode Island Red	30	32.95	Hunterdon, N. J.
Aseltine Poultry Farm	White Leghorn	30	32.95	Michigan
M. A. Dounay	White Leghorn	30	32.90	Passaic, N. J.
Glendale Poultry Farm	Rhode Island Red	30	32.85	Rhode Island
Ford's Riverbank Farm	Rhode Island Red	29	31.90	Missouri
Lukert Leghorn Farm	White Leghorn	29	31.85	New York State
H. J. Hardin	Rhode Island Red	29	31.75	Georgia
Redbird Farm	Rhode Island Red	30	31.65	Pennsylvania
Booth Farms and Hatchery	White Leghorn	29	31.60	Florida
G. B. Treadwell	Rhode Island Red	30	31.55	Maine
Robert Chapman	Rhode Island Red	29	31.30	Oklahoma
Colonial Poultry Farm	White Leghorn	27	29.45	Arizona

Twenty Highest White Leghorn Pens in Country to July 1

Owner	Eggs	Points	Test
J. A. Hanson	3125	3283.25	Storrs
J. A. Hanson	2881	3046.75	Storrs
Horseshoe Poultry Ranch	2917	2994.35	Texas
Wm. L. Gilbert Home	2828	2988.05	Storrs
Erath Egg Farm	2800	2968.40	Texas
George M. Heberer	2818	2929.95	Texas
Guy A. Leader	2754	2877.35	Storrs
George A. Pearce	2715	2855.60	Hunterdon, N. J.
C. O. Davis	2681	2842.80	Texas
George M. Heberer	2680	2838.60	Texas
Kauder's Pedigreed Leghorns	2662	2824.15	Storrs
A. E. Guinn	2793	2817.95	Georgia
J. A. Hanson	2754	2815.80	Passaic, N. J.
Sand Springs Home Farm	2794	2809.40	Texas
W. C. Eckard	2636	2802.55	Michigan
Alfred MacMillan	2617	2797.60	Texas
Rochelle Egg Farm and Hatchery	2791	2791.05	Texas
Piho Brothers	2648	2790.30	Storrs
Kauder's Pedigreed Leghorns	2617	2772.50	Storrs
John A. Clear	2643	2750.00	Hunterdon, N. J.

Twenty Highest Rhode Island Red Pens in Country to July 1

Owner	Eggs	Points	Test
E. B. Parmenter	2804	3047.45	Rhode Island
H. J. Hardin	2857	3028.70	Georgia
Thomas Mettler	2855	2981.95	Hunterdon, N. J.
R. W. Anderson	2792	2949.50	Storrs
Alampi Poultry Breeding Farm	2751	2947.35	Passaic, N. J.
To-Lani Farm	2936	2945.40	Georgia
E. B. Parmenter	2677	2879.35	New York State
Alampi Poultry Breeding Farm	2816	2870.65	Passaic, N. J.
W. C. Mullins	2714	2862.75	Texas
Thomas Mettler	2728	2853.30	Passaic, N. J.
E. B. Parmenter	2709	2845.00	Western New York
R. E. & F. H. Kendrick	2628	2831.15	Rhode Island
E. B. Parmenter	2647	2819.55	Storrs
J. J. Warren	2655	2814.35	Texas
W. H. Wilson	2874	2814.10	Georgia
J. J. Warren	2676	2809.30	Storrs
Ford's Riverbank Farm	2709	2805.65	Maine
Glendale Poultry Farm	2574	2787.45	Rhode Island
Walter H. Rogler	2632	2780.95	Storrs
Crooks Farm	2618	2773.60	Storrs

Twenty Highest New Hampshire Pens in Country to July 1

Owner	Eggs	Points	Test
Eben Wood	2626	2852.15	Storrs
Thomas Mettler	2754	2823.90	Pennsylvania
George A. Pearce	2719	2742.75	Passaic, N. J.
Joachim Breeding Farm	2507	2718.80	Storrs
Joachim Breeding Farm	2574	2714.65	Pennsylvania
Lamar W. Sexton	2590	2682.95	Hunterdon, N. J.
Wene Chick Farms	2491	2677.50	Storrs
James H. Horne	2497	2660.70	Storrs
Eben Wood	2418	2612.25	Rhode Island
Pine Top Poultry Farm	2362	2563.55	Storrs
Kauder's Pedigreed Hampshires	2364	2547.70	Georgia
Floyd H. Moore	2419	2509.15	Pennsylvania
Broad Acres Farm	2459	2497.85	Storrs
Fuzzydele Farms	2317	2480.70	Pennsylvania
Triple Pine-Tested Quality Farm	2447	2465.60	Western New York
Hubbard Farms	2402	2437.50	Pennsylvania
Ned C. Willoughby	2398	2430.80	Georgia
Hank's Hennery	2346	2416.70	Storrs
A. J. Williams	2285	2389.05	Florida
Steelman Poultry Farms	2225	2385.85	Storrs

Twenty Highest Barred Plymouth Rock Pens in Country to July 1

Owner	Eggs	Points	Test
Norman W. Amidon	2846	2945.20	Pennsylvania
R. C. Cobb	2821	2919.95	Storrs
Dryden Poultry Breeding Farm	2646	2666.00	Storrs
Riley Poultry Farm	2676	2644.75	Texas
J. W. Schaible	2645	2636.20	Hunterdon, N. J.
P. N. Hibbard	2536	2586.25	Storrs
Stuart W. Smith	2438	2478.10	Storrs
Fuzzydele Farms	2429	2468.75	Storrs
R. C. E. Wallace	2440	2462.90	Florida
Broad Acres Farm	2462	2454.20	Storrs
Riley Poultry Farm	2361	2444.10	Michigan
Booth Farms and Hatchery	2308	2416.95	Oklahoma
Booth Farms and Hatchery	2312	2411.65	Florida
Booth Farms and Hatchery	2206	2348.65	Missouri
E. B. Parmenter	2229	2324.00	Pennsylvania
R. R. Parks	2314	2322.10	Pennsylvania
E. B. Parmenter	2213	2321.20	Georgia
Foster Jameson	2199	2306.45	Maine
Dryden Poultry Breeding Farm	2317	2300.80	Pennsylvania
Eben Wood	2144	2284.10	Passaic, N. J.

Twenty Highest White Plymouth Rock Pens in Country to July 1

Owner	Eggs	Points	Test
Riley Poultry Farm	2523	2617.90	Oklahoma
Homestead Farm	2603	2462.30	Pennsylvania
John Spangenberg	2349	2423.65	Storrs
Kalerok Farm	2247	2411.85	Rhode Island
Booth Farms and Hatchery	2266	2399.50	Missouri
Townsley Trapnest Farm	2305	2383.40	Georgia
Riley Poultry Farm	2392	2377.75	Storrs
E. A. Hirt	2260	2370.00	Storrs
John Spangenberg	2264	2346.85	Maine
Booth Farms and Hatchery	2318	2346.25	Texas
Four Winds Farm	2302	2310.55	Michigan
F. L. Woodworth	2171	2302.10	Michigan
E. A. Hirt	2175	2301.20	Rhode Island
Riley Poultry Farm	2419	2280.05	Georgia
Drumm Egg Farm	2183	2249.05	Georgia
Belcarihill Farms	2223	2221.60	Storrs
Belcarihill Farms	2189	2204.40	Pennsylvania
Clyde Cochran	2175	2197.70	Oklahoma
Kalerok Farm	2056	2168.65	Pennsylvania
A. H. Ward	2112	2141.75	Oklahoma

Average Production in Each Test to July 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for June	Per-Cent Mortality to July 1
Storrs	1,300	173.23	179.76	24.88	1.69	10.61
Texas	1,456	166.71	170.85	24.57	1.64	15.79
Pennsylvania	1,066	166.01	169.74	24.52	3.47	16.60
Georgia	1,352	164.68	167.97	24.45	1.77	16.78
Passaic, N. J.	1,144	162.34	167.42	24.74	2.09	13.46
Oklahoma	650	162.01	166.67	24.67	2.15	14.15
Hunterdon, N. J.	650	158.75	164.21	24.81	2.30	12.92
Michigan	741	156.69	161.70	24.74	2.56	15.38
Florida	1,248	157.63	161.00	24.50	2.32	14.66
Rhode Island	650	146.23	153.83	25.24	2.30	17.38
Arizona	390	153.65	153.50	23.98	2.05	15.38
New York State	1,092	147.08	150.85	24.60	1.83	11.53
Western New York	884	145.14	150.33	24.84	2.14	10.29
Central New York	910	143.88	150.01	25.00	2.74	12.52
Maine	1,027	142.54	144.68	24.36	2.14	16.06
Missouri	780	135.87	144.43	25.51	3.20	18.07
All Tests	15,340	156.57	161.22	24.69	2.22	14.40

High Pen, Each Breed, in Illinois Non-Standard Test to July 1

Owner	Breed	Eggs	Points
C. A. Kaiser	White Leghorn	1676	1731.95
Mapleside Poultry Farm	Barred Rock	1744	1714.80
Belldear Hatchery	White Wyandotte	1496	1547.50
F. S. Tarbill	Rhode Island Red	1490	1523.35
Berry Ajax Hatchery	Black Australorp	1452	1502.65
Illinois Hatchery	White Rock	1316	1364.40
John Pfeifer	New Hampshire	1249	1362.15
Wallace Moody	Buff Rock	940	963.80

Five High Pens, R.O.P. Progeny Test, Paterson, N. J., to July 1

Owner	Breed	Eggs	Points
J. J. Warren	Rhode Island Red	3065	3130
E. B. Parmenter	Rhode Island Red	3039	3124
W. B. Coles	White Leghorn	2857	2894
Crooks Farm	Rhode Island Red	2763	2864
E. R. Rutter	White Rock	2696	2728

High Pen, Each Breed, in Vineland, N. J., Hen Test to July 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	1807	1957	Two-Year
E. B. Parmenter	Rhode Island Red	1651	1783	Two-Year
Schwegler's Hatchery	Barred Rock	1474	1580	Two-Year
Albert Lawton	White Rock	1228	1331	Two-Year
Pine Top Poultry Farm	New Hampshire	796	870	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	1252	1365	Three-Year
J. J. Warren	Rhode Island Red	1011	1098	Three-Year
Nedlar Farm	New Hampshire	790	847	Three-Year
Schwegler's Hatchery	White Wyandotte	1408	1514	Mixed-Age
Treiber Poultry Farm	White Leghorn	1403	1512	Mixed-Age
Kerr Chickeries	Barred Rock	1345	1445	Mixed-Age
Quimby School	White Rock	1195	1286	Mixed-Age
Wene Chick Farm	New Hampshire	1136	1214	Mixed-Age
Kerr Chickeries	Rhode Island Red	1034	1122	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5572	6026	Two-Year
E. B. Parmenter	Rhode Island Red		5639	Two-Year
Schwegler's Hatchery	Barred Rock	4783	5020	Two-Year
Albert Lawton	White Rock	4221	4490	Two-Year
Pine Top Poultry Farm	New Hampshire	3573	3860	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	7248	7786	Three-Year
J. J. Warren	Rhode Island Red	6917	7455	Three-Year
Nedlar Farm	New Hampshire	5445	5954	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to July 1

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	2052	2209.55	Two-Year
E. B. Parmenter	Barred Rock	1893	2075.40	Two-Year
Fuzzydele Farms	New Hampshire	1607	1759.65	Two-Year
J. J. Warren	Rhode Island Red	1607	1751.25	Two-Year
Lindstrom Poultry Farm	White Wyandotte	1521	1661.10	Two-Year
Fuzzydele Farms	White Leghorn	1621	1773.10	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	5609	5842.85	Two-Year
E. B. Parmenter	Barred Rock	5204	5598.55	Two-Year
J. J. Warren	Rhode Island Red	5128	5478.85	Two-Year
Fuzzydele Farms	New Hampshire	4862	5237.90	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4611	4942.75	Two-Year

Chicken in the Rough

Chicken in the rough comes from the alluring collection of recipes, "Foods Made Famous at the World's Fairs," by Julia Lee Wright, director, Homemaker's Bureau, Safeway Stores, Inc., Oakland, California. The name and method of preparing it are copyrighted.

They tell us that at the Estonian Cafe on Treasure Island you stand in line with hundreds of other people waiting to eat this specialty dish. You can produce the same result at home by preparing Chicken Southern Style.

"In the Rough" applies to the informal way of serving it, no silverware but a miniature gaily painted bucket of warm water and lemon to freshen your fingers from time to time. Shoestring potatoes, four piping hot fluffy biscuits in an individual baking pan for your portion, and honey accompany the chicken.

—Kathryn Bele Niles, U. S. Egg and Poultry Magazine, August, 1940.

New Poultry House Materials

The successful housing of poultry in concrete structures belies the rather common impression that wood is the only satisfactory construction material. Many New Jersey poultrymen are using concrete block, poured concrete, building and conduit tile for the end and back walls of the poultry houses. On well drained soils, concrete floors are also proving satisfactory.

Condensation in poultry house is a result of inadequate removal of moisture coupled with low temperatures, and is, therefore, controllable, regardless of the type of construction materials. Houses of masonry or ceramic materials have the advantage of low up-keep and fire hazard reduction, besides being vermin and insect proof.

—N. J. College of Agriculture, Engineerin News Notes.

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Vol. 2, No. 21 September 15, 1940

National Poultry and Egg Board Created

By O. A. HANKE

Reprinted from Poultry Tribune

AT last the billion dollar poultry industry has organized to promote consumer education.

"The organization to promote the World's Poultry Congress came up like a plant, then wilted, but left seed which should in turn generate a great consumer education program for the billion dollar poultry industry," exclaimed J. E. Rice, congress president, when the congress corporation was dissolved. It did generate a program.

Long after its many other interesting features have been forgotten, the 1940 International Baby Chick Association Convention will be remembered as the place at which 19 organizations of the poultry industry joined hands to form the National Poultry and Egg Board.

Definite Recommendations Developed

From the committee on first year program (H. A. Bittenbender, chairman, Herbert Beyers, Andrew Christie, W. F. Leimert, L. S. Tenny, Herman Demme, Leon Todd) came the following recommendations which were accepted by the permanent board:

1. Organization should be incorporated.

2. Provide for paid personnel to

Poultry-Dairy Publishing Co., Mount Morris, Ill.
(Poultry Tribune, September, 1940)

include a managing director and staff.

3. The staff should plan to—

a. Organize the industry so there will be a central agency to act as a clearing house for ideas to promote the consumption of poultry and eggs.

b. Make a survey of promotional and research work now being done, in order to avoid duplication and in order to make available to the industry the benefit of work done and in progress.

c. Work with and urge federal, state, and other agencies to study consumer habits in connection with the use of poultry and eggs.

d. Develop a plan for permanent financing. Should be developed as quickly as possible, bringing in all phases of the industry.

4. The committee suggests the following budget:

Personnel, $13,000
Office rent, $1,200
Office equipment, $1,000
Telephone, telegraph and postage, $1,500
Office supplies, $1,500
Organization and travel, $5,000
Miscellaneous, $5,000
Balance to be used for educational work.

From the committee on permanent program (Clyde C. Edmonds, chairman, Harry Atkins, J. Buxbaum, H. G. Eisert, E. B. Heaton, Reese V. Hicks, Homer I. Huntington, W. B. Loucks) came the following recommendation, also later adopted by the National Board:

Any program designed to bring about consumer education regarding a given food product must have information in reference to consumer preferences and buying habits; must give proper and adequate attention to the field of nutrition and home economics, and be able to offer, in pamphlet form or otherwise, new uses, seasonal uses and food combinations, including the use of the subject product; must make use of available information based on research by existing federal and state agencies and other research institutions; must qualify to aid in the field of merchandising, through educational work among retailers and consumers; must take advantage of every agency through which a liberal and effective distribution of the information obtained and available can be accomplished at a minimum of expense and must disseminate through industry contacts frequent reports of progress and achievements.

Such a program would ultimately call for a segregation of the work into at least four fields, and we recommend the following divisions:

Division of Industry Relations and Information
Division of Home Economics
Division of Consumer Research and Nutrition
Division of Merchandising

Each of the objectives listed under the heading of permanent goal as

contained in the prospectus issued by the Planning Committee will fit perfectly into at least one of the four divisions recommended.

Before the convention closed, the $30,000 goal had been reached and it was decided that the treasurer immediately will bill all organizations and individuals which have made pledges to this fund. Others, who have not subscribed at the present time, are invited to send their checks immediately to Lloyd S. Tenny, treasurer, National Poultry and Egg Board, 110 N. Franklin St., Chicago, Ill. It is hoped that the initial fund can be raised to $50,000.

From the World's Poultry Congress executive committee the board received a gift of 10,000 left over congress recipe books. About $1,500 remaining in that treasury was given to the World's Poultry Science Association for educational use and for the loan of its president, J. E. Rice, who served the congress so faithfully.

Many contributors at the convention expressed the feeling that a $30,000 fund is inadequate to do the necessary work. It was explained that this fund will be used primarily to establish a headquarters office, hire a managing director and other needed staff members, and develop gradually an orderly plan of permanent financing; perhaps by the taxation method an equitable plan can be conceived. It was pointed out that no one should expect advertisements in national magazines in behalf of poultry products or other flourishes of this type which would require large sums of money.

Chosen to head the board was H. C. Demme, Sewell, N. J. His executive committee consists of Lloyd S. Tenny, treasurer, Glenn H. Campbell, secretary, Andrew Christie, first vice president, Clyde C. Edmonds, second vice president, and Hobart Creighton and N. R. Clark, directors at large.

Homer I. Huntington, who for a number of years has been executive-manager of the New England Fresh Egg Institute, Inc., has been appointed manager of the National Poultry and Egg Board.

Because he even now operates a poultry farm, has wide acquaintance and varied experience, he is considered an ideal choice. He will direct the consumer education activities of the board and is now organizing the program which will have headquarters in Chicago about October 1.

Organizations and directors comprising the National Poultry and Egg Board are:

National Turkey Federation, Charles Wampler, Harrisonburg, Va.
U.S. R.O.P. Federation, Hobart Creighton, Warsaw, Ind.
Institute of American Poultry Industries, Frank Priebe, Chicago, Ill.
International Baby Chick Assoc., L. Harris Hiscock, Skaneateles, N. Y.
National Poultry, Butter & Egg Assoc., J. Buxbaum, Boston, Mass.
National Egg Products Assoc., W. F. Leimert, Kansas City, Mo.

New England Fresh Egg Institute, Inc., Homer I. Huntington, Worcester, Mass.
Poultry Publishers Assoc., H. G. Eisert, Chicago, Ill.
Northeastern Federation of Egg & Poultry Co-ops, Andrew Christie, Kingston, N. H.
American Feed Mfrs. Assoc., Inc., Ralph M. Field, Chicago, Ill.
American Poultry Assoc., Harry Atkins, Davenport, Ia.
Chicago Mercantile Exchange, L. S. Tenny, Chicago, Ill.
National Poultry Producers Federation, Herman Demme, Sewell, N. J.
Utah Poultry Producers Co-op, Assoc., Clyde C. Edmonds, Salt Lake City, Utah.
Cooperative G.L.F. Exchange, Inc., J. C. Huttar, Ithaca, N. Y.
American Farm Bureau Federation, R. W. Brown
New York Mercantile Exchange, W. B. Loucks, New York City
Northeastern Poultry Producers Council (NEPPCO), Leon Todd, Trenton, N. J.
Northwestern Turkey Growers Assoc., Herbert Beyers, Salt Lake City, Utah
Directors at Large — Glenn H. Campbell, Cleveland, Ohio; H. A. Bittenbender, New York City; N. R. Clark, Chicago, Ill.; O. A. Hanke, Mount Morris, Ill.; D. D. Slade, Lexington, Ky.

Roof Openings Admit Sunlight

While putting the upper row of galvanized roofing on his poultry house, H. L. Porter of Fontana, San Bernardino County, Calif., had trouble with the pieces of galvanized roofing sliding down on the lower roof section to the ground. This gave him the idea of making sliding panels out of galvanized material which could be let down to admit sunlight directly into the hen houses. From this idea he developed a system by which his entire 105-foot house has sliding roof panels eight feed wide, which make a veritable sun parlor out of his poultry house.

One piece of galvanized sheet metal is nailed down in place on each side of these panels. Then four pieces are nailed to a wooden strip which is on top of the galvanized sheet at the lower end and under it at the upper end. The sides lap over the permanent piece enough so that the corrugations slide on each other. With a short pole, the sliding panels can be pushed up until the building is closed at the peak, or slipped down when they are wanted open. The roof on the other side of the house extends about a foot over the sliding side in order to keep out rain.

The idea is being used by many poultrymen in the community at present. With a galvanized roof, it is necessary to have proper ventilation. On this particular ranch, a sprinkling system has also been installed to help keep the house cool on hot days.

—Henry J. Beckman, California Cultivator, August 10, 1940.

Factors Affecting Egg Production Profits

By ROY E. JONES

Connecticut State College

Transcript of a Talk

UNDER existing price relations, there is very little profit in straight wholesale market egg production. According to poultry farm management figures, profits come from diversity within the industry which helps to step up gross receipts and does not necessarily greatly increase the investment.

I would like to list three "musts" for poultry profit as follows:

1. A poultryman must have good breeding stock
2. He must grow good young stock
3. He must keep accounts.

Accounts are a yardstick with which it is possible to identify and increase profitable activities and eliminate unprofitable activities. This yardstick may be read in terms of labor income. Labor income is that amount of money that may be credited to the operator's labor after paying all expenses, plus interest on owned capital. In making this calculation, the entire farm, including the home, is included in the investment.

Average labor income from year to year changes with the variation in price relations. In 1933, the labor income on 33 poultry farms in Connecticut averaged $501. In 1935, under more favorable conditions, 49 farms had an average labor income of $1,692. In 1937, when price relations were again unfavorable, the average labor income on 105 farms was down to $610. In 1938, the average labor income on 128 farms was $1,281, while the average labor income on 121 farms was $1,081 in 1939.

The labor income on individual farms varies with individual ability and can be greatly improved by applying the six poultry efficiency standards which follow.

1. **High egg production per hen:** 185 eggs per bird, hen day basis; 140 eggs per bird on hens housed basis.

2. **High egg production during October and November:** 30 eggs per bird for the period, 15 eggs per bird per month.

3. **Low hen mortality:** Not more than 10 per cent per year.

4. **High sales relative to fixed costs:** Sales 75 per cent of total investment.

5. **Efficient labor:** 1,200 hens per man or $5,000 sales per man or $5.00 sales per $1.00 labor cost.

6. **Volume and diversity of industry:** Gross sales $8,000 or more. Some sales other than eggs and poultry.

High production of 180 eggs or better is necessary for satisfactory returns. The range in production

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Talk presented at the sixth annual summer meeting of the Maryland State Poultry Council, Elkton, Md., July 31, 1940 was from 236 eggs per bird on the best farm down to 118 eggs per bird on the poorest farm. The average pullet production on all farms was 181 eggs. The average hen production on all farms was 132 eggs.

These figures indicate that there is no economic reason for keeping old hens except as breeding stock.

When we break the farms up into groups on the basis of egg production, we find a very definite relation to labor income, as shown in table 1.

Table 1—Relation of Egg Production per Bird to Labor Income.

Av. Egg Production	No. of Farms	Labor Income
(Eggs per bird)		
Under 150	9	$ 392
150—159.9	14	673
160—169.9	19	811
170—179.9	21	1,011
180—189.9	18	1,281
190—199.9	15	1,607
200 and over	25	1,520

Fall Yield Important

High egg production is not the only requirement, as high egg production during the season of high prices in October and November is just as important as high egg production for the year.

The highest production for these two months was 40 eggs per bird, while the lowest egg production was only 8 eggs per bird. This requirement could be stated in another way; namely, that it is important that a larger volume of egg production be obtained from July 1 to December 31 than from January 1 to June 30. In order to do this, it is necessary to hatch early, bring pullets into production in July and August, and carry a large proportion of the old hens through the fall months at the same time. With this procedure, it is necessary to have healthy, high-production stock and practice what we have called the barracks system. This involves the use of large brooder houses for early brooding which may be used as laying houses during the summer and fall, or the use of summer laying shelters to make additional laying hen capacity during the summer and fall.

The relationship between October and November production and labor income is shown in table 2.

Low mortality is another requirement for high labor income. The range in mortality on different farms was from 2 per cent on the best farm to 35.4 per cent on the poorest farm.

TABLE 2—Relation of Fall Egg Production to Labor Income.

Eggs per Hen Oct 1—Nov. 30	No. of Farms	Labor Income
15 or less	8	$ 142
15.1 to 20	13	569
20.1 to 25	23	777
25.1 to 30	44	1,219
30.1 and over	33	1,605

The relationship between mortality and labor income is shown in table 3.

Another important measure of the value of low mortality may be recorded in terms of salvage value of the flock. The salvage value in percentage is the relation between the laying flock inventory at the beginning of the year and the laying flock sales and the inventory at the close of the year. Some flocks run as low as 25 per cent salvage value while others run up to 90 per cent salvage value. A good flock should show at least 65 per cent salvage value.

TABLE 3—Relation of Mortality to Labor Income.

Per cent Mortality (Laying Flock)	No. of Farms	Labor Income
Over 15	22	$ 306
12.0—14.9	15	492
9.0—11.9	40	1,161
6.0— 8.9	26	1,366
Under 6	18	1,492

The efficient use of capital on a poultry farm is recorded in the relation between cash sales and fixed costs. The lowest farm in this respect had only 13 cents sales per dollar invested, while the best farm had $1.38 per $1.00 invested. The average of all farms was 62 cents per dollar invested. For a satisfactory return, the farm should sell at least 75 cents worth of products per $1.00 invested or a cash sales of 75 per cent of the total invested. Table 4 shows how farms compared when grouped according to sales per dollar invested.

TABLE 4—Relation of Cash Sales Per $1.00 Invested to Labor Income.

Cash sales per $1.00 Inv.	No. of Farms	Labor Income
(Cents)		
Over 100	13	$2,462
80—99.9	14	1,944
60—79.9	31	1,275
40—59.9	41	720
Under 40	22	112

Large farms are usually more efficient in sales per dollar invested than small farms because the investment per hen usually decreases when the number of hens increases.

Labor Efficiency

Labor efficiency on poultry farms may be recorded in terms of receipts per dollar labor cost, including an allowance of $1,000 for the operator's labor. The lowest farm in this respect reported only $1.21 sales per $1.00 labor cost, while the highest farm had $9.50 per $1.00 labor cost. The average was $4.43 sales. For a satisfactory labor income, the sales should be at least $5.00 per dollar labor cost.

Farms classified according to earnings per $1.00 labor cost appear in table 5.

TABLE 5—Relation of Gross Receipts Per $1.00 Labor Cost to Labor Income.

Gross Receipts Per $1.00 Labor Cost	No. of Farms	Labor Income
Below $2.00	8	$ 89
2.00—2.99	21	189
3.00—3.99	25	721
4.00—4.99	30	1,150
5.00—5.99	24	1,829
6.00—6.99	8	2,228
7.00 and over	5	2,597

Other standards that may be used in measuring labor efficiency are 1,200 hens per man or $5,000 sales per man.

Volume and diversity of industry, as measured in terms of gross sales, is an important factor in poultry farm profit. The smallest farm studied reported the sale of $1,573 worth of products, which was obviously too small a business to maintain a home and net a profit. The highest farm reported sales of $35,216. The average sale per farm was $7,539. To return a fair labor income, a farm should have a sale of at least $8,000.

The relation of labor income to volume of sales is shown in table 6.

TABLE 6—Relation of Gross Sales to Labor Income.

Cash Sales	No. of Farms	Labor Income
Below $3,000	16	$ 266
3,000— 6,000	49	629
6,000— 9,000	22	954
9,000—12,000	16	1,328
12,000—15,000	8	2,399
Over 15,000	10	3,423

Diversity within the industry is an important factor in stepping up gross sales without greatly increasing the investment. Under diversity, we may consider wholesale eggs, retail eggs, hatching eggs, day-old chicks, broilers, roasters, capons, ready-to-lay pullets and breeding stock; whichever may work in best with the particular farm setup or market outlets available.

TABLE 7—Relation of Labor Income to Combined Profit Factors in which Poultrymen are Above Average on 128 Connecticut Farms.

No. of Factors Above Average	No. of Farms Involved	Labor Income
0	14	$ 292
1	18	420
2	21	400
3	33	762
4	19	1,644
5	15	1,928
6	11	2,307

The six poultry efficiency factors listed with the efficiency standards at the beginning of this article are all of vital importance in stepping up poultry farm earnings. When we list the effect of these factors in terms of the number of any one of these factors in which farms may be above average, we find a very definite relation to labor income, as shown in table 7.

A study of individual farm accounts, over a period of years, where these factors have been used to indicate changes that should be made, shows a marked improvement in labor income. Several farms, where accounts have been kept consistently for a period of years, have grown from a very modest beginning to businesses with a labor income of better than $5,000 per farm.

These farm management figures would indicate that the time a poultryman spends keeping accounts is the most profitable time spent from the standpoint of earnings.

ENGLISH farmers are asked to cooperate further in their nation's defense by building their hay ricks, where possible, in the middle of grass fields which might be used as landing grounds for enemy aircraft. Haystacks should not, however, be erected near airdomes if it can be avoided.

—Eggs, London, England, June 26, 1940.

Make it Easy for Birds to Eat and Drink

Eggs are made from the feed and water that the birds consume. No bird can maintain a high level of production unless she eats and drinks liberal quantities of feed and water.

Pullets will eat more and drink more if you make it easy for them to do so. It is therefore important to look at your laying house and satisfy yourself on these four questions:

1. Is there enough feeder space to give the timid birds (as well as the bossy birds) a chance to eat whenever they are hungry?
2. Is there enough drinking space to give the timid birds a chance to drink whenever they are thirsty?
3. Are the waterers close enough to the feeders so all birds can turn from feed to drink, and back again, with the least possible effort?
4. Are feeders and waterers both placed in well-lighted positions, so all birds can see to eat and drink early in the morning and late in the evening? This is particularly important in dull weather and during the short days if you aren't using lights.

Here's a guide. If you're feeding an all-mash ration, 100 birds need 40 feet of hopper "feeding space." If you're feeding mash and scratch, 100 birds need 25 feet of hopper "feeding space." For water, provide 3 fountains or pans per 100 birds—big enough to hold at least 6 gallons (combined).

—Checkerboard News, August-September, 1940.

Turkey Bits

One of New Jersey's growers is using a turkey bit to control feather picking. This gadget is similar to a hog ring in some respects. It is made of wire and passes through the nostril of the turkey between the upper and lower beak. This small wire keeps the turkey from closing its mouth completely, thus making it impossible for the bird to pull out the feathers of another. Five days after the installation of these turkey bits on his flock, all picked turkeys had started growing new feathers, and there was no indication of further picking.

—J. C. Taylor, Everybodys Poultry Magazine, August-September, 1940.

ACCORDING to conservative estimates, poultry raisers in the state of Iowa would receive a premium of $5,000,000 annually if they practiced more careful methods of gathering, cooling, storing, and marketing of their eggs.

—American Poultry Journal, July-August, 1940.

Non-Auction Egg Co-Ops

By ROY W. LENNARTSON
Associate Agricultural Economist
Farm Credit Administration

Condensed from News for Farmer Cooperatives

SO rapidly have co-op auctions taken the limelight in poultry and egg marketing that there probably are many who have concluded that in the 13 northeastern states, where most of the auctions operate, all other cooperative effort in this commodity field has been eclipsed.

All is not auction, however. In fact, in the 13-state territory the present score is 32 non-auction associations to 20 auctions. Moreover, since 1930, when the auctions first appeared, there have been more non-auction co-ops formed than auction co-ops.

It is true, of course, that the auctions have made a remarkable 10-year growth to a membership of 17,500 and a business that approximates 10 million dollars a year. It is likewise true that non-auction associations, which have grown much more slowly, handle only about half as much business. Nevertheless, they are important—and nothing emphasizes their importance as much as the fact that non-auction types fit into localities and circumstances in which auction associations do not.

As a matter of fact, this whole problem of adapting cooperative activities to the particular needs of a community is one which auctions and non-auction associations share equal honors in solving. Painful experience proved that pooling associations failed to fit all conditions, and for a time some thought that auctions would fill the bill wherever pools wouldn't work. Today it is realized that there are many varying conditions of production and marketing, and many types of cooperatives are needed to meet farmers' needs.

Types of Co-ops

In the northeastern states, there are now six distinct types of egg and poultry co-ops, several of them distinct to New England.

It was the pool type of association which enjoyed the first wave of popularity and development, in New England as elsewhere. In the twenties, the pool type of association was practically the only type of association organized to market eggs and poultry. This was due largely to the succesful organization and operation of large pooling associations in the Pacific Coast and Mountain states. This type of association continues to be highly successful in these states because of favorable production conditions and because it meets the marketing needs of the western producers.

Elsewhere, the pool type of association in many instances just didn't fit. The written histories of a large number of associations organized throughout the Midwest and East, which unwittingly adopted in all its phases the pool type of association, are now found in the files marked "out of business."

The new association of the thirties was the auction type. In a minor way, the eagerness of groups to organize auctions has been similar to those uninformed groups which unfortunately and almost universally adopted the pool type of organization in the preceding decade.

Flexible Organization

Simplicity of organization and operation has been a fortunate feature for a number of the auction associations. It has permitted changes to be made with relative ease at times when a more complex and rigid set-up would have hindered or prevented these changes. There are concrete examples among these auction associations which, after relatively short periods of operation, found that an auction sale without sufficient buyer patronage was actually no auction. These associations merely substituted other methods of sale and continued to operate.

Comparative Growth

The growth of the non-auction associations, as has been said, has been much less rapid than the auctions. This has been due largely to two factors: (1) Location in less favorable production areas, and (2) Auction competition.

Unlike the auction associations, which are surprisingly alike in all respects, non-auction associations vary considerably as to type, organizational set-up, operating methods, and the number and kind of services performed.

The reason for this variety is that each of the non-auction associations has been set up to conform to varied local marketing needs and conditions and, in some instances, to local production conditions. In a few areas, these conditions are comparable to those which surround successful auction associations, and it might be supposed that an auction type of association would operate equally as well. Further analysis would probably reveal, however, that the non-auction associations now operating in these areas are performing some particular service for their members or buyers not common to the auction type of association. Furthermore, there are production areas which do not provide marketing conditions favorable to the auction type of selling, and producers must, therefore, if cooperative mar-

Farm Credit Administration, Washington, D. C.
(News for Farmer Cooperatives, August, 1940)

keting is desired, fashion some different type of organization.

Five Non-auction Types

On the basis of their operating methods and the services performed, the non-auction associations may be classified into five types of associations: Bargaining, commission, outright purchase, sideline, and the pooling type already referred to.

Simplest as to type and performing the least services are the bargaining associations, generally known as egg clubs. Oldest of these is the Quality Egg Club at Vineland, N. J., organized originally in 1924. Bargaining associations neither assemble, handle, sell, nor make payment to the members; they merely supervise or act as intermediaries in the selling process. Most of the services are performed by the members. This type of association is particularly adapted to those areas which depend upon terminal markets to which direct shipments are made by individual producers.

Since members perform most of the service themselves, association costs are low, varying from small annual dues to 5 cents a case on all eggs sold under the association label.

Commission Associations

Commission associations are similar to the auctions, differing primarily in the method of selling. Two of the five commission associations began operating as auctions, but found it advisable to change their selling method. Instead of selling by the auction method on one or two specified days each week, the commission associations have found it advisable to make sales, particularly of a jobbing nature, daily. The members' eggs are sold in individual lots insofar as possible, as is done by the auctions. The eggs are graded by the producers at the farm, and the association performs the services only of inspecting, selling, and making returns.

Costs of selling through this type of association are similar to those of auctions of equal size, or about 45 cents a case of eggs.

TABLE 1—Volume of Eggs and Poultry Marketed by 42 Associations of Different Types in the 13 Northeastern States, 1938

Type of Association	Number of Associations	Products Marketed			
		Eggs		Poultry	
		Volume	Percentage of Total	Volume	Percentage of Total
		(Cases)	(Per Cent	(Crates)	(Per Cent
Bargaining	4	110,258	7.9	....	....
Commission	5	69,164	5.0	....	....
Pool	5	103,183	7.4	110	0.2
Outright purchase	4	202,337	14.6	....	....
Sideline	6	35,200	2.5	3,948	1.8
Auctions	18	870,439	62.6	208,780	98.0
Total	42	1,390,581	100.0	212,838	100.0

The outright-purchase associations, like private handlers, purchase the eggs and poultry from members at the going market or other price which may have little relation to the price received by the association. These associations attempt to retain a margin which, over a long period of operation, will at least cover expenses. Any accumulated margins in excess of operating expenses are usually returned to the members as patronage dividends.

Costs Slightly Higher

The gross income of outright-purchase associations averaged 58.8 cents a unit (case of eggs or crate of poultry) in 1938, which gives some indication of the marketing costs of members of this type of association. There is a tendency for this type of association to grade and candle eggs and perform other services to a greater extent than auctions. Consequently, their costs are slightly higher.

Sideline associations are those not primarily organized to market poultry products but do so as a supplementary service for their members. Of the five associations of this type, four are purchasing cooperatives and the other is a creamery. All, however, use the outright purchase methods in their egg and poultry-marketing operations.

Oldest and most prominent of the non-auction associations are the two pooling associations in Connecticut, which were organized in 1923 and 1924. Less prominent and of more recent origin are six small local pools in West Virginia and one pooling association in Maryland.

There has been considerable speculation with regard to the future development of the pool type of association in the East, in view of the rapid expansion of the more simple type and less costly operating methods of the auctions. Nevertheless, two pooling associations operate in an area where three auction associations have made considerable headway.

Average handling deductions of the pooling associations were $1.01 a case in contrast to auction deductions averaging 40 cents. However, the pooling associations grade and, in some instances, candle all eggs received — a time-consuming and costly service not rendered by the auctions. They also carton eggs and make delivery to the buyer — two additional services not rendered by the auctions.

Despite the more rigid membership requirements and higher marketing costs, the pooling associations have continued to maintain a satisfactory rate of growth and are performing a highly satisfactory job of merchandising.

In 1938, 28 of the non-auction associations marketed 500,000 cases of eggs and 4,000 crates of poultry, the combined value of which totaled slightly less than $5,000,000. In the same year, the 18 auction associations then operating handled 870,000 cases of eggs and 200,000 crates of poultry, valued at $9,800,000. Of the non-auction group, 22 are strictly egg-marketing cooperatives, 5 are supply organizations, and 3 are turkey associations.

Poultry is marketed by only four of the non-auction associations and the volume handled is not important, totaling only 4,000 crates in 1938 in contrast to 220,000 crates handled by 15 auctions.

Active membership of the non-auction associations totaled 6,049 at the end of 1938, an average of 224 per association, and a range of from 7 to 1,000. At the end of 1937, active membership in the 18 auctions totaled 11,653, averaged 647, and ranged from 150 to 2,263.

TABLE 2—Classication of Non-auction and Auction Associations According to Volume of Eggs Marketed, 1938

Volume of Eggs Marketed (Cases)	Type of Association			
	Non-auction		Auction	
	Number	Per Cent	Number	Per Cent
Less than 10,000	15	53.6	....	....
10,000 to 25,000	5	17.8	6	33.3
25,000 to 50,000	4	14.3	6	33.3
50.000 to 100,000	4	14.3	4	22.2
100,000 and over	....	....	2	11.2
Total	28	100.0	18	100.0
Average volume—Cases	20,005	....	46,608	....
Range—Cases	330 to 65,128		10,177 to 125,312	

Mud Holes Dangerous

Next to having the drinking water itself contaminated, nothing will start an epidemic as quickly as a mud hole. During these hot days a mud hole makes an ideal breeding place for bacteria of all kinds. The best way to prevent mud holes is to dig a pit a foot or two deep, place a screen, made out of lath, greased, and nailed 1½ inches apart, over this and on this screen place your water trough. The dribblings from the turkeys and any leakage from the trough goes into the pit and is protected from contact of the birds.

—Norbest Turkey News, August, 1940.

TWELVE MILLION laying hens, or about two-thirds of the Netherland's stock, will be slaughtered before Sept. 15 because of a shortage of chicken feed, according to recent newspaper reports. Similar moves are expected in Denmark.

The Future of Market Poultry

By R. GEORGE JAAP and R. B. THOMPSON
Oklahoma Agricultural Experiment Station

Condensed from U. S. Egg and Poultry Magazine

THE future of market poultry depends entirely on two major factors: (1) environment—management, feeding and processing; and (2) heredity—inherent qualities and uniform capabilities.

Environmental Changes May Be Rapid

When environment is changed, all birds in the flock are subjected to this change. When heredity is changed, it occurs only in a few individuals. New management, feeding or processing methods may be put into immediate use. For example, say a new combination of food was discovered which would put more fat in the flesh of an average chicken. Such a combination of food could be given to all birds as soon as it was discovered. Time is consumed merely in disseminating the information. Then every chicken prepared for human consumption could be raised under this new feeding plan.

Heredity Changes are Time-Consuming

Because it takes time to make changes through heredity, poultry breeders must be in a position to forecast the heredity which will be desirable 10 to 20 years in advance. The heredity of all birds cannot be changed at a moment's notice. Desirable stock is attained only in a few birds over a period of years of careful breeding. Some of these will transmit some of their characteristics to some of their progeny. To affect the capabilities of all poultry requires years for dispersal of stock and multiplication of it.

The time necessary to change the inheritance of poultry has been greatly reduced with the advent of the commercial hatchery. Only about 30 years ago the majority of people hatched eggs from their own flock; now the commercial hatchery supplies the majority of the chicks. The eggs from each flock during a period of at least three or four months are scattered to many poultry raisers. One hundred hens under such a system may produce about 4,500 chicks. Should all of these be sold to prospective breeders, there would be around 2,000 pullets available from each 100 hens. Therefore, from the standpoint of disseminating valuable heredity, the future possibilities of market poultry appear bright.

Institute of American Poultry Industries, 110 N. Franklin St., Chicago, Ill.
(The U. S. Egg and Poultry Magazine, August, 1940)

Influence of the 300-Egg Strain Fad

Whenever there is a fad for anything, all other desirable factors suffer from this passing popularity. The reason is evident. Other important characteristics are forgotten. All intense breeding during the past 30 or more years has been directed toward higher egg production. The appearance of the dressed carcass, regardless of what some may say to the contrary, has been entirely forgotten. Anything that is economically valuable cannot be forgotten without deterioration. The breeder who is breeding market poultry should not forget egg production. Good egg production strains are now available and it is a matter of maintaining these qualities while the body conformation is being improved. It is much easier to maintain good egg production once it is established in a strain than it is to breed up good egg production in poultry whose production is inferior.

The poultry industry is extremely fortunate that high egg records are associated with three characteristics advantageous to prime market quality. These three market assets which early and rapid egg production favor are: (1) rapid early growth, (2) more fat in the body early in the growth period and (3) uniformity.

Rapid Early Growth

The only reason that a Leghorn may weigh as much as a Rock at six or even eight weeks of age is that the particular strain of Leghorns being compared starts laying at a much younger age than that of the Rocks. Should the Rocks start laying at the same age as the Leghorns, they will be larger even at the earliest market age.

Fat Broilers

The amount of fat in the body of broilers is usually associated with the rate at which they grow or the younger they are when they reach 2 pounds in weight. Chickens whose heredity is such that they do not start laying until spring do not produce good, fat broilers. At least reasonable egg production is necessary in a stock which will produce chickens carrying some fat early in life. If egg production is poor and sexual maturity late, the chicken carries very little fat until it has almost ceased growing. A pullet which stores fat early in its growth has more energy available for egg production when it starts laying.

Uniformity

Under management and feeding methods generally used at present, stock with poor egg production is not uniform during early growth. There are never as many "runts" in high egg production stock as there are among chicks from poor laying parents. Good market results can never be attained when eight-week old chickens vary from three-quarters to two and a quarter pounds in weight. Uniform and high egg production have tended to eliminate such variability in growth.

Broad, Well Muscled Breasts

In order to produce a large number of eggs, a hen does not need a heavily muscled breast. Also, since chickens do not fly like wild birds, breast muscles are no longer needed for wing action. As a result, the narrow - breasted, poorly - muscled chicken has probably an equal chance to survive. Good breast muscles are no longer needed to keep poultry alive until the next breeding season.

Man can eliminate narrow-breasted birds from the mating pen. This simple procedure in itself is the only method by which permanent improvement may be made in future market poultry. To do this, the hands must be used instead of the eyes. Too many people allow the feather outline of a bird to determine whether it shall be used in the breeding pen. The present-day breeder not only allows the feather contour to mislead his selection, but he also usually has a mistaken idea in feeding.

Fatness and Egg Production

Just because a hen which has laid many eggs is not fat, people think that a fat hen may be reduced (in the human sense of dieting) to egg production. If a hen has the inherited ability to lay many eggs and has a reasonable diet, she cannot be made too fat. A hen does not eat more mash and as a result lay more eggs. It is just the reverse. Egg yolks start developing and the hen needs more protein (mash) in order to fulfil her job of laying at a rapid rate.

It is surprising how many breeders will pick up a plump hen and say that she is too fat. Actually, it may be the well developed breast musculature or a different body shape that he mistakes for fatness. Such misconceptions as these must be remedied before the future market poultry may be improved.

Hands vs. Eyes in Breeder Selection

If every breeder of market poultry could be blindfolded before he made his selection of breeders, progress in improving market quality would be rapid. With too many people it is a "love at first sight" proposition. People are inclined to put more faith in what they see than what they feel with their fingers. A deep body profusely covered with loose feathering only gives an appearance of large size and body plumpness.

Body Weight and Leg Length

A proportionately large body in relation to leg length is an indication of market conformation quality or plumpness. Actual measurements have proved the accuracy of this idea, which has been prevalent among poultry breeders. Among the more common breeds, Wyandottes and Orpingtons have proportionally large bodies in comparison with their shank length. Rocks, Reds and New Hampshires are intermediate, with Leghorns having excessively long shanks. There is danger in having the shanks proportionally too short. Extremely short-legged Cornish are examples of this defect. The result is poor reproduction which automatically keeps this breed among the rare variety group.

The Body Can Be Too Deep

Although Wyandottes and Orpingtons as breeds have proportionally shorter shanks than Rocks, Reds and Leghorns, they are not always the best market specimens. The reason these two breeds are often surpassed by Rocks and Reds is found in the fact that often their bodies are excessively deep. This is a fault which has arisen as a result of using the eye rather than the hand in breeder selection. Both of these breeds have a particularly loose, profuse feathering which, when combined with a deep narrow body, gives the impression of large size. In Rocks and Reds, the feathering lies closer to the body, making a broad, well-muscled breast much more noticeable.

Is Depth Really in the Keel?

Birds of the same size vary in the depth of the keel itself and it appears that excessive body depth may often be the result of a deep or wide keel. Although writers are continually emphasizing a deep body for market purposes, recent studies demonstrate that the majority of chickens and turkeys are too deep. It is probably true that a large body cavity is desirable. From a carcass quality standpoint, it is preferable to attain large body capacity by breadth rather than depth. A relatively narrow keel "blade" particularly at the front is desirable. Then the cavity may have reasonable depth, making the overall depth moderate. A hen does not need a deep keel or a deep body cavity to lay a large number of eggs.

Shape More Important Than Per Cent Flesh

Of recent years, there has been considerable discussion regarding which breed, variety or strain has the largest percentage of edible flesh. Actually, in two 5-pound dressed roasters at the same age, the maximum difference is usually less than one-tenth of a pound. This fraction of a pound is of minor importance when compared with the appearance of the body. The fact that chickens and turkeys are chickens and turkeys is why people buy them. They are proud to bring in a roast fowl which appears plump. There appears to be some evidence that plumpness and a high percentage flesh may be incorporated in the same bird. If this can be done, it is highly desirable; but if you show a consumer a narrow-bodied, deep bird, which often has more flesh, he usually asks for a plumper one. Since variation in amount of flesh in birds at the same weight and age has no practical significance, body shape is the all-important characteristic.

Attaining Uniformity

Uniformity is a word often used but seldom put into practice. The reason is simple. Only a few people are endowed with the ability to feel or see uniformity in live birds. Even those who have this ability would make more rapid progress if they relied on actual body measurements. Uniformity will never reach a high degree of perfection until this is done.

There is still considerable to be learned regarding which measurements are most important. Proportional length of shank and proportional body depth from the front of the keel are the two most valuable measurements found to date. These are most efficient from a breeding standpoint when chickens have reached approximately 10 months of age. Environmental handicaps or advantages tend to be smoothed out at maturity, making possible a better estimate of the bird's inheritance.

Feathering and Bare-back in Broilers

The best time to determine the feathering abilities of a strain is as soon as the chicks are hatched or, at the latest, 10 days after hatching. At hatching, chicks of the heavier breeds have varying lengths of the wing sprouts. If a chick has long and growing pin feathers at hatching, it is almost humanly impossible to make it develop a bare back or feather slowly. If at 10 days after hatching the chick has a "whisk-broom" tail like Leghorns, it is always well feathered early.

Selecting for parents only those chicks well feathered at six to eight weeks will not eliminate slow feathering. The heredity must be determined before feeding and management have a chance to obscure it. Any broiler raiser who does not insist that the baby chicks he purchases have long wing feathers is certain to encounter poor feathering.

❧ THE most naive question of the week: "If a bomb falls on my laying house, will my birds be liable to moult?" And our reply was: "We wouldn't be surprised if they set up a new record in fast-moulting."
—Eggs, London, England, July 3, 1940.

❧ SKINS of dogs, cats, and even chickens are being used to meet the acute shortage of cowhides in Japan, according to an announcement by the U. S. Department of Commerce. Hides of sea animals are also used, says the report.

POULTRY RESEARCH

Transmitting Fowl Paralysis by Blood Inoculation

Positive evidence of the ability to transmit fowl paralysis by blood inoculation was secured at the University of Missouri Agricultural Experiment Station by A. J. Durant and H. C. McDougle.

Reporting in that station's Research Bulletin 304, the investigators state that 17.1 per cent of birds inoculated with fresh blood from infected chicks developed fowl paralysis, while only 3.55 per cent of the birds in the control group contracted the disease.

The results also show that there were three periods of age of donors when the blood more readily transmitted the disease, namely; 20 to 30 days, 50 to 60 days, and 110 to 120 days. Fowl paralysis produced artificially occurred somewhat earlier than natural transmission. The eye form (both inoculated and control) developed much later than other forms.

Fowl Paralysis and Gray Eye

Occurrence of gray eye (iritis) was found to be highly correlated with the wing and leg form of fowl paralysis in tests at Western Washington Experiment Station, reports C. M. Hamilton, acting veterinarian, in Washcoegg, August, 1940.

Because iritis occurs as a single lesion of leucosis or is found associated with other forms of the disease, it should be considered as much a part of the leucosis complex of diseases as is paralysis of the legs and other forms of the disease, concludes Hamilton.

Of 80 birds showing iritis, post mortem examinations showed 43 to also have leg or wing paralysis; 2 to also have enlarged liver, spleen or kidneys; 12 to have iritis and tumors, and 23 to have iritis and two or more other forms of fowl paralysis.

Transmission of Fowl Paralysis

Previous work on the transmission of and resistance to fowl paralysis in chicks was substantiated by the investigations of E. M. Gildow, J. K. Williams, and C. E. Lampman, reporting in University of Idaho Agricultural Experiment Station Bulletin number 235.

It was concluded that the disease is usually naturally contracted early in the life of the chick (before 6 weeks of age), but that a small percentage of highly susceptible stock will contract the disease naturally through contact after 6 or 12 weeks of age.

Little evidence concerning the comparative resistance of chicks of different ages was found, but some indication was given that 6-week-old chicks from very susceptible stock are highly resistant to fowl paralysis when not brought into contact with the disease prior to that age.

Fowl paralysis was found to be so readily transmissable that it was very difficult to prevent such transmission when infected birds were on the same premises or had recently been on the same premises as healthy birds.

It was found to be possible to increase the resistance to the disease by elimination of susceptible stock. Greatest natural selection occurred when only old hens were used as breeders.

Confinement Raising of Turkeys Prevents Parasitic Diseases

A method of raising turkeys in confinement so as to prevent parasitic diseases transmitted by a species of blackfly was found by workers at the Virginia Agricultural Experiment Station, says E. P. Johnson, animal pathologist, in that station's Bulletin 323.

A 12 by 32-foot shelter enclosed with unbleached cheesecloth of 28 by 24 strands per inch was used for the birds from six weeks of age to maturity. Isolation and prevention of contamination resulted in the production of birds entirely free from all parasitic diseases.

Trouble with slipped tendon, encountered in the first two year's experiments, was satisfactorily controlled by feeding manganese, reducing the amount of bone meal and meat scrap in the ration, and increasing the amount of cod liver oil used.

Seek Worm Remedy

In a series of tests involving 223 substances and 27 mixtures carried on at the Beltsville Research Laboratories by Paul D. Harwood and James E. Guthrie, no satisfactory medicinals for use in treating poultry infected with tapeworms were found.

Only lead arsenate exhibited any promise as a poultry taeniacide, says the report in the Journal of the American Veterinary Medical Association, September, 1940 (Vol. 97, No. 762), but effective doses of the compound were too toxic to be recommended for general use.

Cost and Profit Records Reviewed

Three different cost studies were reviewed by Hermon I. Miller, assistant extension economist of the Vermont Agricultural Extension Service in Vermont Circular 103.

The studies were of 1928-29 poultry year records on 53 Vermont farm flocks, of New York farm records for the years 1934-38, and of 58 Vermont farm flock reports for the 1937-

38 poultry year.

It was found that the net cost of growing a pullet to laying age was $1.07, $1.04, and $1.05, respectively, in the three studies. The cost of keeping a hen a year was $3.92, $3.47, and $4.23, respectively, while the total returns per hen averaged $4.64, $3.43, and $5.69, for the three studies, in that order.

It was concluded in the circular by Miller that, with a suitable climate and soil and a 10 to 12 cent premium for eggs to be had, the poultry enterprise is well adapted as a side line for Vermont dairy farms.

Returns for the time spent on hens by New York farmers who kept cost records averaged 47 cents per hour from 1915 to 1935. This was 14 cents higher than the average for all enterprises and 20 cents higher than the returns for the time spent on dairying in these same years.

Common Grasses Equal in Riboflavin Content

Plants such as oats, wheat, bluegrass, and timothy are of equal value as a source of riboflavin, and any difference in riboflavin content may be accounted for by variation in the time of cutting, rather than plant variations, report Charles H. Hunt and R. M. Bethke of the department of animal husbandry, Ohio Agricultural Experiment Station, in the Journal of Nutrition, August, 1940 (Vol. 20, No. 2).

These plants offer an excellent source of riboflavin in the early stages of development.

Alfalfa plants exposed to strong sunshine for 48 hours after cutting suffered a loss of about 25 per cent of their riboflavin content. Curing in windrows or cocks will speed up the process and will result in higher riboflavin content of the finished feed.

Egg Shells Satisfactory as Source of Calcium Carbonate

When the prices of normal sources of lime are high, a satisfactory substitute for use in growing and laying rations is egg shell, reports H. L. Wilcke in the Iowa Farm Science Reporter, July, 1940.

In processing egg shells for feeding to chicks and laying hens, the shells must be freed from adhering white and they must be sterilized and ground. Sterilizing is of particular importance, as some poultry diseases are transmitted through the egg, and one disease outbreak could far outweigh any economies to be gained by the use of the substitute.

Feeding Oats to Poults

When high mortality resulted from feeding oats which were too coarsely ground to turkey poults, workers at the Ohio Experiment Station eliminated all oats from the ration for the first six weeks and thereafter included whole oats with good results, report D. C. Kennard and V. D. Chamberlin in Ohio Bimonthly Bulletin, No. 203.

Grasshopper Poison Kills Turkey Poults

Improperly spread grasshopper bait was found to be fatal when consumed by turkey poults on a California range, according to the report by P. D. DeLay of the California state department of Agriculture in the Journal of the American Veterinary Medical Association for August, 1940.

Two 10-week-old turkey poults were examined after they died on range. A positive arsenic test was obtained from the intestinal content and from a solution of macerated grasshoppers which had been taken from the crop. Thirty in a flock of 600 had died.

The owner had not followed the manufacturer's recommendations in spreading the bait. Previous studies have indicated that there is little danger in pasturing poults on baited range when poisons were properly mixed and spread.

Make Sure the Birds Eat Enough Feed

As the pullets come up in production, it's vitally important to be sure they are eating enough feed. It takes more feed to make 18 or 20 eggs a month than to make 12. If the flock doesn't increase its daily feed consumption, as production increases, the birds will lose flesh and possibly go into a serious slump. Here's one way of finding out. Clean out the feeders and put in an accurately weighed quantity of mash. If you're feeding grain-and-mash, weigh the grain also and feed it all in the feeders. Then, 24 hours later, clean out the feeders again and weigh up the quantity that's left, so you know exactly how much the birds ate in 24 hours.

Whether you are feeding an all-mash ration or grain-and-mash, birds that are gaining in egg production should increase their feed consumption as follows:

Egg Production	Feed Per Day
40%	20 to 22 lbs. per 100 birds
50%	23 to 25 lbs. per 100 birds
60%	26 to 28 lbs. per 100 birds
70%	30 to 32 lbs. per 100 birds

—Checkerboard News, August-September, 1940.

❧ A FOUR-YOLKED egg was discovered recently in a lot of eggs being handled by a grader of the San Joaquin Valley Poultry Producers Association, according to the San Joaquin Valley Poultryman.

Chicken is Favorite of World's Fair Diners

Poultry suppliers within the trading areas of the New York World's Fair and the Golden Gate International Exposition in San Francisco have found a substantial and consistent market in the eating and catering concessions in both fair grounds. Resisting all inroads of foreign delicacies and fancy preparations of steaks, sea food, and other leaders on the fair menus, chicken has sustained a popularity sufficient to rate it as the "All American Dinner" at both expositions.

In the New York Fair commissaries, many thousands of chickens are used daily to feed visitors. The commonest method of preparing and serving chicken is broiled, with fried chicken running a close second. The prevalence of broiling is attributed to the fact that greater quantities can be prepared this way in advance and held ready for serving.

Prices for chicken dinners run from a 65 cent bottom, at the Virginia Fried Chicken restaurant, to $2 at the Restaurant Francais, where boiled chicken in Sauce Supreme is the feature. The average price for a dinner is from 90 cents to a dollar. Chief users of poultry at the New York show are the Virginia Fried Chicken restaurant, using from 2,500 to 3,000 daily; the Brass Rail & Ballantine Inns, averaging about 1,200; Caruso's, averaging about 1,000; the three New Orleans restaurants using about 1,000, and the Canterbury & Red Lion Inns, with 1,000. Only competitor to chickens on any of the bills of fare is duck, which is the leader at the Old Prague Restaurant, and at the Pabst Blue Ribbon Gardens, who have been using duck up to now, but will go into chicken soon.

Among the "fancier" ways of serving chicken in New York are the servings of Chicken Paprika offered at the Swiss Pavilion at $1.50, and Chicken with Wine Sauce at the Swedish Three Crowns for $1.75.

On the West Coast's Treasure Island, average chicken dinner prices are somewhat lower, with 65 cents being about the average between a high of $2 and a 50 cent low. During the operating period of the exposition, it is estimated that about 21,500,000 meals will be served, and that chicken will be the chief item in about one-third of these meals, excluding breakfasts, of course.

Fried chicken is the most popular form of chicken dinner offered on the West Coast, being usually featured under the title of "Chicken in the Rough." Broiled runs second. The combined consumption of the 60 restaurants and eating places on Treasure Island is about 35 cases of chickens daily.

— Poultry Tribune, September, 1940.

Diary of a Poultryman

By PERCY S. WHITE

Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

September 1—Friday is usually a poor day to start a new project, so we took the day to clean up and get ready for next week. Oil buckets, brooms and scrapers were moved to the north house where they will be used in a few days. A couple of early plantings of sweet corn, four rows each across the truck patch, were seeded down to rye. We make it a rule to cut the corn stalks for the cows as fast as the corn is pulled. A heavy stand of rye plowed under next spring will loosen the soil.

September 2—We are all cleaned up now and ready for Labor Day next Monday. All the boards were cleaned today. The soybean patch is still getting its weekly application of droppings. The beans, what is left of them, are about 3 feet high and of exceptional color. Each day some are mowed for the cows, but we have more droppings than we can apply to the cut-over area. Therefore, those which are still standing get an application too. If there is anything to this theory of increasing the nutritive value of forage crops through fertilization, then our beans should be high powered provender. I do know that these cows are very milky when they get two shots of green soybeans a day.

September 4 — Labor Day, and labor is right for Donnie and me. All the help celebrated the occasion, so we had our hands more than full. But we got through in good shape and I even had the eggs packed before sunset.

September 5 — School busses are rolling along the roads again and that means the Old Man is lonesome. It is going to mean a readjustment of the work. Harold and I will have some additional work to do and Donnie will have chores to do before and after school. In a few days we will have another schedule working and things will go along again as smooth as silk. At least, I hope it will. There is nothing like having an organization on a chicken ranch; a regular schedule.

September 6—I believe this north house is going to be easier to clean than any of the others. Maybe it is because practice makes perfect. If there is anything in practice, our batting average should be high after

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(Everybodys Poultry Magazine, August-September, 1940)

two months of cleaning. This is the last house and perhaps we have gained a second wind going down the home stretch.

September 7—The few remaining cockerels on the range are roosting so high in the trees that catching them appears to be out of the question. But there was a coop of running gear hens to sell. I am afraid the gasoline and oil to town are going to knock off a fair percentage of the profits if there are any profits from the sale of such stock. The profit in selling gear stock is not in the price received but in the feed saved.

September 8—"Old Growler," that is a good name for an egg inspector. It seems to me that those fellows always have a grouch on when they talk about egg quality. Ralph Sheppard has started to walk around in circles again, shaking his head all the time. "Too much hot, dry weather," he says, "and the producers are too busy filling silos to gather the eggs often enough." But when the corn is ready for the silo, a decision has to be made, and I suppose most farmers decide in favor of the corn. If one wants good corn fodder to feed, it can't be cut on the Ides of March.

September 9—These range pullets are beginning to eat corn like nobody's business. And it is good for them, too, for they should be of good weight when they go in the laying house next month. If this warm weather continues, I am going to let them stay on the range longer. They will be better off outdoors than they will be inside when it is so warm.

September 11 — Henry Shuey was here this afternoon to look at the north house. He and his helpers will start painting it tomorrow morning. Professional painters will have a coat on about the time we would get our equipment ready. It is going to be cheaper in the long run for him to do it.

September 12 — Buckets, buckets, who has the buckets? I have been so provoked about finding buckets that I brought out a dozen new ones today. Our standard size is 14 quarts, galvanized. The mash buckets are 5-gallon discarded paint containers. But two of them filled with water is more than the Old Man can tote without having slipped tendons, and enlarged back joints. It is bad enough to have fallen arches from toting feed without further disasters from water.

September 13 — It just simply doesn't pay to neglect maintenance of buildings. The north house should have been painted several years ago, but it was easy to let it slide. Now I am paying for it. Talk about drinking paint, those boards just gulped it. Without a doubt it is going to take twice as much material as I had estimated. There are 16 sash to replace and Shuey says to get 10 pounds of putty to reglaze the remaining. In a couple of years, this house will need a new roof.

September 15 — Dry and hot, and the corn gets so dry in the afternoon that Harold cuts only in the forenoon. Looks as if we are going to have a bumper crop. This morning I brought home one of these temporary corn cribs. As a matter of fact, it is one of these snow fences that the highway department uses to prevent snow from drifting. This type of temporary crib is very popular in this section of the state. Almost every farmer uses one as an overflow crib. When the time comes to shuck corn, we will lay some boards over discarded fence posts and circle the fence on top of them. When the crib is full, it will be topped off with bundles of fodder.

September 16—I ended the week by burning the incinerator. The accumulation of dead stock was not very great, but I just don't like to have it sticking around. The incinerator is an air tight stove in the tool room, and while there is no noticeable odor or flies, I don't like to think what is on the inside of it. If the stove isn't burned out regularly, the first thing I know there is an accumulation on the outside and then we have a double burning. That is when the stove gets hot, and what I mean, it does get hot. A stove full of burning dead stock is just about the same as a stove full of burning auto tires.

September 18—The month is half gone and I am plodding along. Unless there is a very decided break in the weather in the next few weeks, I think the pullets on the range are better off outside. Henry Shuey and his painters started on the second coat of the north house.

September 19 — Had quite a discussion with Ralph Treat today. He says that something must be done to take care of the increased volume of live poultry offered for sale. The present quarters are positively swamped, and with increased growth, next year it will be impossible to handle the situation. It is beginning to look as if it were time to complete the building program that was outlined when the present building was constructed.

September 23 — Thirty pounds of putty! That is what I call a pile of gooey stuff, but that is what it took to reglaze the windows in the north house. The only compensation is that it was a real job of glazing.

Aside from a new roof, the north house is in good shape for about four years. Today's paint seems to be good for about four or five years and then it is cheaper to paint than it is to neglect it. I have learned a lesson this time. The problem is: Am I going to remember it in a few years? When a hole has been punched in the old pocketbook about the size of a wagon wheel, it is high time the lesson was remembered.

September 26 – Attended the monthly meeting of the auction board of directors last night. Once again I drew the prize assignment as member in charge of the annual meeting. It was the grand prize, full of headaches, for our annual meeting is a large scale affair. An assignment which takes lots of thought, time and patience for it is the policy of the board to put over a banquet that is a real affair.

September 27 – I wonder, sometimes, if I have the fortitude that most farmers have. Of course, I am not a real dirt farmer; I am only a chicken man. It is now wheat seeding time and it seems to me as if my neighbors go along with their work with a strength of mind and body and a patience which I lack. I imagine that poultrymen have so many different jobs to do in a day that they are under somewhat of a nervous tension. Sundown doesn't stop the work on a chicken ranch, and it usually seems that the day is just getting well under way for me. But if these birds didn't lay any eggs at all, then I would growl about having none to pack after supper.

September 28—Work is a wee bit slack on the ranch at present. All of the cleaning has been done and the east, west and north houses are waiting for pullets. In less than an hour all houses could be prepared, for all there is to do is to wash the oil out of the fountain troughs and put mash in the hoppers. But it is too early and hot to move the pullets from the range.

Lights for Late Turkeys

Here is an idea for some of the turkey raisers to try out when days begin to shorten this fall: Switch on flood lights in the middle of the night, let the birds come off the roosts for feed and water, then dim the lights so they will go back to roost.

Several bits of information at hand suggest such an experiment might have favorable possibilities. They are: 1—All good poultrymen know hens without artificial light cannot consume enough feed after nights lengthen to lay profitably; 2—A number of broiler producers have

found they can speed gains with lights; 3—Various experiments show that turkey gains per pound of feed consumed drop as the days shorten, and that early turkeys finish more satisfactorily than late ones; 4—It is possible to bring turkeys off the roosts for feed and water by turning on flood lights, and a number of growers have found it possible to put young poults on the roost at a given hour by means of a dimming device.

It seems possible from the above facts that better growth and finish might be obtained if turkeys on range were given a longer day from September to the time of marketing. This could be done by turning on lights at 4 o'clock in the morning at first, and progressively earlier as the nights lengthen or by a lighted period that would bring the birds down in the middle of the night for feed and water.

Last summer, Chester Snyder's flock of 1,700 was stampeded in the middle of the night, flew off the roosts and scattered in every direction. The Snyder family got out motor cars, turned on lights and headed them toward the roosts, and the birds came in and went to roost again. Two large reflector-type lights then were installed to light up the grounds under the roosts and around feeders and waterers. Snyder, who lives in Henry county, Ohio, found that if the lights were turned on after the birds were on the roosts they immediately came down and began to eat and drink.

Such a set of lights could be used to bring birds down. Another set of lights installed a few feet above the ground to throw their rays horizontally could be trained on the perches. This undoubtedly would be more effective if a screen obstructed the rays so the ground was dark or only dimly lighted.

There are many turkey raisers with enough mechanical ingenuity to fix up 3 cheap alarm clocks to switch lights off and on so their sleep would not be disturbed. The first would switch on flood lights. After an hour, or whatever time was needed for birds to get their fill, a second clock would switch flood lights off and roost lights on. The third would switch off roost lights after birds had been given time to go back.

—George A. Montgomery, Capper's Farmer, September, 1940.

OSCAR, a Muscovy duck, serves as a self-appointed sentry at the Seattle coast guard repair station, according to a newspaper report. On 24-hour duty for only food and shelter, Oscar chases away dogs, cats and even persons who venture on the government property.

Broiler Production in Western Indiana

FEED cost was 54.3 per cent of the total cost of broiler production for a group of western Indiana farmers in 1936 and 1937, but the most important factor in determining profits from broilers was the time of year at which they were sold. Mortality, crowding, litter materials, fuel consumption, and broiler weights were also of importance in determining net income, according to the findings published in Purdue University Agricultural Experiment Station Bulletin No. 441. The study was made by E. C. Young of the Purdue Farm Management Department with the assistance of C. W. Carrick of the Poultry Department and M. G. Smith, D. D. Sutherlin, and J. C. Dibble of the Farm Management Department.

The production of poultry during the winter and spring has grown rapidly in Indiana since 1921. During the period of development, poultry prices have been relatively high, as compared to general farm prices, and this, with other factors, has been responsible for the adoption of more intensive methods of production and better management.

The use of more intensive methods has resulted in an increase in egg production in relation to poultry meat production. Egg prices have declined relative to poultry meat prices. In the period 1910 to 1919, one pound of poultry on Indiana farms was equal in value to .53 dozen eggs. During the period 1920 to 1939, a pound of poultry was equal to .60 dozen eggs, and from 1930 to 1939 it was equal in value to .73 dozen eggs.

Associated with increased intensity of poultry production has been the rapid increase in the use of commercial feeds. In 1916, less than 2,000 tons of poultry mash were sold in Indiana, while more than 300,000 tons of commercial feeds were sold. By 1930 poultry mash sales had passed the 100,000 ton mark, and in 1939, 184,894 tons of poultry mash went to Indiana farmers, while the total sales of commercial feeds amounted to 588,477 tons. Rapid progress in poultry nutrition, disease control, and equipment has made possible the raising of chickens in confinement during the winter months. The seasonal variation in cost of raising chickens to 3-pound weights is very small.

Broiler Cost Facts

Cost studies showed that feed constituted 54 per cent of the total cost of broiler production, chicks made up 20 per cent, fuel 8 per cent, and man labor 8 per cent of the cost. In 1936 the cost per pound of broiler produced was 18.28 cents and in 1937 it was 20.14 cents. The difference could be traced almost entirely to the higher feed costs in 1937. Average profit per 100 pounds of broiler produced was $5.20 in 1936 and $2.94 in 1937.

Bul. 441, Purdue University Agricultural Experiment Station, Lafayette, Ind.

The feed consumed per pound of broiler produced varied widely and was an important factor in determining profits. In 1936 the broilers fed 5 pounds of feed or more per pound of broiler showed a profit of 4.5 cents per pound of broiler, but in 1937 that group gave an average loss of .7 cents per pound. Profits decrease as the feed fed to produce a pound of broiler increases.

The number of chicks per pen was another important factor in determining profits. When more than 400 chicks were started per pen, the death loss increased to such an extent as to become a limiting factor.

Floor Space Affects Mortality

The amount of floor space per chick started was another factor found to be worthy of serious consideration. In lots allowing 50 square feet or more of floor space per 100 birds the average death loss was 10.8 per cent. In lots allowing less than 50 square feet of floor space, the mortality averaged 15.1 per cent, and some lots averaged as high as 19.3 per cent.

Operators listed disease control as the most difficult problem in producing broilers. Coccidiosis and bronchitis were reported as causing the most trouble. In both years studied, death losses were greatest during the second week. Weak chicks and pullorum disease accounted for most of the losses during the first week with bronchitis leading as the cause of mortality during the second, third, and fourth weeks. Coccidiosis was an important cause of death after the fourth week. Crowding was an important cause, and undoubtedly there was an association between crowding and death losses.

Fuel used accounted for 8.3 per cent of the total cost of producing broilers. Fuel was important in explaining variations in cost because of its relation to rate of gain, feeding efficiency and death loss. In both years the death loss with oil brooding was less than with other fuels,

Number of Broilers per Pen Related to Certain Cost Factors

Number of chicks started per pen	Total number of broilers produced	Average death loss (per cent)	Average total cost per pound of broiler produced (cents)	Average pounds of feed fed per pound of broiler produced	Average rate of gain per day per 100 broilers produced
250-less	7,770	5.1	18.8	4.1	3.01
251-349	63,347	11.0	19.1	4.6	2.94
350-449	76,029	15.3	19.3	4.9	2.88
450-over	18,228	19.1	20.0	4.7	2.20
Total	165,374	13.7	19.2	4.7	2.82

but the cost of fuel per 100 broilers averaged $4.92 for oil, $3.99 for coal, and $4.34 for electricity and combinations.

Feed Efficiency

As the weight of the finished broiler increased, the average amount of feed required per pound of broiler produced also increased. Other costs decreased substantially, however. The most common practice was to finish broilers at weights ranging from 2.5 to 3 pounds. The maximum average profit was obtained when broilers were sold at this weight.

In studying the results obtained with different kinds of litter materials, it was found that sand was used in five of the 141 lots and gave the highest mortality (27.6 per cent), with ground corn cobs, also used in five lots, giving the lowest mortality (6 per cent). Peat was used in the largest number of pens (58), and showed a mortality of 8.6 per cent with only four cleanings of the pens. Pens in which sand was used were only cleaned one time, but the average number of cleanings for all litter materials was 17.

The size of the broiler enterprise had little relation to the cost of production per pound. It was indicated that broiler production is a business of constant costs with little or no advantage in the large lot. The profits per pound were higher for large lots principally because of higher selling prices.

Home Hatching Unsatisfactory

Original cost of chicks was 19.8 per cent of the total cost of producing broilers. Ten hatcheries supplied 92 per cent of the chicks started, with nine lots of the chicks being home hatched. The average death loss for all chicks was 13.7 per cent, but the average of home hatched chicks was 25.9 per cent. Part of the high death loss for chicks hatched at home may be the result of failure to cull chicks at hatching time.

The building and equipment cost was 6.1 per cent of the total production cost. Although there was a relatively high investment in buildings and equipment by producers with a large capacity, the special buildings and equipment costs were compensated for by lower labor and fuel costs.

Profits Limited by Date of Sale

The most important factor affecting profits was the time of year at which the product was sold. Chicks started in February netted a profit of 6.3 cents per pound of broiler produced, with the profits decreasing on chicks started earlier and later. September-started chicks showed a loss of 3.1 cents per pound of broiler produced and May started chicks lost 8.8 cents per pound produced.

Time of starting chicks is directly related to the time of selling the finished broiler and this to the price received. Getting the broilers on the market in April and May was responsible for the high profits recorded.

By using factory pay rolls, trend, and the January farm price of chickens, it was possible to make an estimate of broiler prices several months in advance, which estimate could be used in determining whether broilers should be produced and the quantities to be produced.

The greatest profit was reported for broilers finished at 2.5 to 3 pounds and sold in May with the highest average price for broilers obtained in April and the highest average price for springers obtained in May.

Delaware Smoked Turkey Plant

Delaware is due for something new in the poultry industry in the near future. Plans are under way for the opening of the peninsula's first smoked poultry plant at Brenford, a small town near Smyrna, in the northern part of the state. The enterprise is to be known as the Delmarva Smoked Poultry Corporation. Present plans call for a weekly poultry output of around 40,000 birds. Of this amount between 7,500 and 10,000 are to be broilers, and the rest turkeys, ducks, geese, squabs and guineas.

The process of smoking is said to include treatment with a secret blend of herbs and then a smoking with various roofs and woods grown in Florida, the whole process being handed down by the Seminole Indians of Florida. These woods are understood already to have been brought up from the south.

—American Egg and Poultry Review, July, 1940.

Government Egg Buying Suspended

The Surplus Marketing Administration suspended purchases of eggs on September 3, and will accept no more offerings until further notice.

Since the surplus egg purchase program was started in December, 1939, the S.M.A. has bought over 2,330,000 cases of eggs at a commodity cost of approximately $12,500,000. About 1,300,000 cases of the eggs purchased have been donated to public assistance families and for school lunches. The remainder, of slightly more than a million cases, will be held in storage and released for similar distribution.

—U. S. D. A. News Release.

Disinfectants in Poultry Production

By R. S. DEARSTYNE, H. C. GAUGER
and R. E. GREAVES

Condensed from N. C. Circular 241

GERMICIDES or disinfectants are not substances to cure diseases, but are specifically used to destroy germs which, if allowed to live and propagate, might result in serious disease outbreaks.

The germ-destroying action of most disinfectants is rapidly spent by contact with organic matter such as manure, litter, etc., thus emphasizing the necessity of a very thorough removal of such organic matter before the disinfectant is applied.

The duration of exposure, temperature, and concentration of the disinfectant are important factors entering into the results obtained by disinfecting.

Nature of Disinfectants

Disinfectants may be either physical or chemical. Among the physical disinfectants we have:

1. Sunlight, which may or may not be rapidly effective according to moisture, temperature, duration of exposure and other conditions.

2. Burning, which is very effective, but not usually practical under ordinary conditions of poultry practice.

3. Boiling, which may find application in poultry work where facilities exist for immersing small pieces of equipment in boiling water.

Because of the limitations of physical disinfectants, the use of chemicals or solutions of chemicals is resorted to chiefly in poultry work.

The most common enemies of poultry life for which disinfectants are applied with greater or less success are: bacteria, protozoa (as coccidia), viruses, molds, and worm and insect eggs. Some of these are readily destroyed by the judicious use of a germicide, while others as coccidia and worm eggs are highly resistant to the ordinary solutions used for disinfecting purposes.

Disinfection of Poultry Houses

If no contagious disease exists and if the litter is regularly replaced before the limit of its absorbent capacity has been reached, the house and its equipment should be disinfected after each cleaning. If a contagious disease outbreak is present, the frequency of cleaning and disinfecting is dependent upon the nature of the disease present and existing conditions of housing and management.

North Carolina State College of Agriculture and Engineering, Raleigh, N. C.
(N. C. Agricultural Extension Service Circular 241)

In the control of bacterial diseases such as Pullorum Disease, Fowl Typhoid, Paratyphoid and Cholera, and mycotic (mold) diseases such as Aspergillosis, immediate destruction of sick birds and very frequent or even daily cleaning and disinfecting of the house and equipment are recommended.

In the control of the highly contagious, virus-borne diseases such as bronchitis and laryngotracheitis, destruction of sick birds cannot be recommended, since all susceptible birds in the flock may have become infected shortly after the outbreak had started. Although frequent cleaning and disinfecting of the house and equipment and the addition of a germicide to the drinking water will not control the latter two diseases, it should aid in reducing the amount of infectious material to which a well bird would be exposed.

In the control of such protozoan diseases as Blackhead, daily destruction of affected birds and daily cleaning and disinfecting of the house and equipment is essential. Coccidiosis can generally be controlled by non-crowding and frequent cleaning of houses and equipment (daily cleaning for this disease in young birds) and without the use of ordinary disinfectants.

Solid Floors Recommended

When a contagious disease is present in a house having a dirt floor, the problem of disease control is very difficult because dirt floors cannot be effectively disinfected and the labor involved makes it practically impossible to change the soil in the house frequently enough for effective control. Because of this fact, solid floors, preferably waterproofed concrete, are recommended for brooder houses and for laying houses.

Cannot Disinfect Dirt Floors

Since it is often impractical or even impossible to disinfect infected poultry yards, confinement of the chicks and adult birds to the house in order to keep them off infected soil is essential to disease control. However, as stated above, confinement of chicks or of adult birds would be of doubtful value if the houses have dirt floors and do not provide adequate floor space.

When birds are kept in confinement as a disease control measure, steps should be taken to provide clean yards for future use, by turning under the soil and seeding it to a cover crop which will produce a good sod as well as green feed. When yard space is very limited and disease exists, it is best to continue to keep adult birds in total confinement and to keep chicks in the brooder house and on wire sunporches until they can be moved to clean range ground.

The limitations of physical disinfectants necessitate the use of chemicals or chemical solutions for poultry work. Factors entering into the effective use of such disinfectants may be summarized as follows:

1. The efficiency of the disinfectant, which usually is related to its cost, develops the thought that a disinfectant purchased on the basis of price alone may prove inefficient and very costly in the long run.
2. The effectiveness of the cleaning and scraping done by the owner prior to the use of the disinfectant. A great many worthy preparations are reduced in their efficiency because of inadequate cleaning prior to their application.

As most disinfecting materials are commercial preparations, the purchaser is dependent on the manufacturer's guarantee and should follow carefully the directions for use of the product as stated on the container. On many of the containers of liquid disinfectants, the strength of the product is expressed in the term of phenol coefficient. This means the relative ability of the preparation to destroy germs as compared with phenol (carbolic acid). Generally speaking, a germicide with a phenol coefficient of 5 or greater is satisfactory for poultry use. Some of the germicidal preparations in common use in disinfecting poultry buildings are:

Lye: Three per cent of lye in warm water is an efficient germ destroyer. To make a satisfactory solution for disinfecting, 1 pound of lye is dissolved in 5 gallons of water. The lye must be completely dissolved and the solution well mixed before it is applied. Since lye is caustic and poisonous, it must be used with care. Two pounds of water-slaked lime added to the above solution will make a good whitewash and will at the same time make the solution more stable. Lye should not be used on aluminum.

Coal Tar Disinfectants: Coal tar disinfectants are cresol preparations which form milky emulsions when mixed with water. There is some variance in their germicidal properties and the uses of these should be carefully considered before purchasing. The manufacturer's directions should always be carefully followed. Such preparations can be best applied with a pressure sprayer.

Lime: Plain, air-slacked lime is a deodorant rather than a disinfectant and should not be used for disinfecting purposes.

Carbolic Acid: This product may be purchased in two forms, namely—phenol and crude carbolic acid. Phenol in the pure form consists of colorless, needle-like crystals. It is dissolved by the addition of 1 part of water to 10 parts of crystals. A three per cent solution is an efficient germicide. Its chief disadvantages are its comparatively high price and its caustic nature. Crude carbolic acid is a mixture of phenol, cresol and certain impurities. A 5 per cent solution of high grade crude carbolic acid makes a good disinfectant. This product is also caustic and should be applied with care. Since its composition is often uncertain, it is not dependable.

Chlorine Disinfectants (Hypochlorites): Chlorine is the base of numerous commercial disinfectants known as hypochlorites. To be effective, these products should contain at least 2.5 per cent, by weight, of available chlorine. On clean surfaces these disinfectants are highly efficient. Their disadvantages are cost, instability when exposed to organic matter and corrosive action on some metals.

The Fire Gun: In some instances, fire guns are used for disinfecting purposes. When these are used, the results obtained will be in proportion to the thoroughness in application.

Disinfecting Dirt Floors

Dirt floors, regardless of the care given them, are a distinct menace to the welfare of the poultry industry. No practical program can be offered which will offer a reasonable degree of assurance that reasonable sanitation can be maintained in houses with such floors. If conditions actually necessitate houses with such floors, these should be scraped once each month and from four to six inches of dirt removed and this replaced with sand or soil from an unpolluted source. The material removed should be taken to some place where chickens do not range and from which surface washing does not occur on land ranged by chickens or on land to be used for range by chickens.

Disinfecting Equipment

Often when a house is to be cleaned and disinfected thoroughly, all portable equipment is moved from the house to facilitate the cleaning activities and is later cleaned and disinfected outside the building. In case of wooden or metallic equipment, the same principles of a thorough scraping away of organic matter prior to disinfecting are necessary. Very often it is practical to boil small pieces of equipment or to use boiling water on them. Such a procedure should be highly efficient if thoroughly completed.

Wooden troughs used for feeding moist mashes should be cleaned thoroughly each day and placed in the sun for several hours, weather permitting. If care is not taken with such troughs, mold development may occur and a serious condition arise in the flock because of this.

Disinfecting Incubators

Practically all commercial hatcheries use force-draft machines with air intakes, which makes incubator disinfection a relatively simple procedure, providing the directions of the manufacturer for fumigation are carefully followed. There are two methods of disinfecting incubators in common use at the present time, both of these being developed toward the use of formaldehyde gas as a fumigant.

1. Potassium Permanganate Method: In this method, 40 cc. (approximately 1¼ oz.) of formalin (commercial 40% formaldehyde) is added to 20 grams (approximately ¾ ounce) of permanganate crystals to each 100 cubic feet of air space. The permanganate crystals are placed in a broad, fairly deep enamel pan at the point indicated in the directions of the manufacturer (usually underneath the air intake pipe). The formalin is added to the crystals and the chemical reaction liberates formaldehyde gas. The temperature of the incubator should be between 95-100 degrees, according to the make of the incubator, and the wet bulb thermometer reading approximately 90. To obtain maximum germicidal action in the machine not containing eggs, the door should not be opened for at least three hours after the mixture has been made. Incubator operators are urged to carefully follow the directions of the manufacturer as to fumigating their specific machine when the machine contains eggs and when the chicks are hatching.

2. Cheese Cloth Method: Determine the number of cubic feet of air space within the incubator by multiplying length times width times height. Cut cheese cloth into pieces approximately one yard square. Measure out 20 cc. (approximately 2-3 ounce) of formalin for each 100 cubic feet of incubator space. Dip the cheese cloth into the formalin and use the number of pieces necessary to absorb all the solution. Hang the saturated pieces of cheese cloth to the ceiling of the incubator so that the cloth hangs directly under the fans and keep the doors closed for three hours. For disinfecting while eggs are in the machine and during hatching, the directions of the manufacturer should be carefully followed.

Disinfection of Incubator Rooms

Incubator rooms in most hatcheries of any size have been constructed for this specific purpose and should be of such character as to maintain a maximum sanitation. Regardless of care taken, very often during the course of a busy season incubator rooms become unsightly and often unclean and, for safety's sake, should be disinfected at periodic intervals. Certainly, at the end of the hatching season and prior to its opening, the incubator room should be cleaned and disinfected and during the hatching season disinfection should take place at least once a month.

Prior to disinfection, the room should be thoroughly cleaned and, if practical, washed. This includes the walls, floors, ceiling and the outside of the machine. There are a number of commercial sprays on the market having a suitable germicidal value for this purpose and of such character as not to deface the woodwork of the room or incubator seriously if used for disinfecting purposes. Such sprays should be carefully applied according to the manufacturer's directions.

Should it become necessary to disinfect the incubator room and its equipment because of an outbreak of a respiratory disease, such as bronchitis, laryngotracheitis or coryza (colds), one may resort to liquid disinfection or to fumigation. For the control of respiratory and other diseases in the hatchery room, the following procedure is recommended:

1. Remove all chicks from the building.
2. Thoroughly wash the room and equipment (ceiling, side walls and floor).
3. Saturate everything in the incubator room, especially the battery equipment and the entrances to the room, with a suitable disinfectant and fumigate the inside of the incubator.
4. The personnel in charge of operations should put on clean clothes after the operation is complete.
5. Storage rooms attached to the incubator room should also be thoroughly cleaned and disinfected.

Incubator rooms which can be made practically air tight can be disinfected by fumigation prior to the time the chicks pip the shell. The directions for fumigation of the incubator room are the same as those given for the disinfection of a force-draft incubator by the permanganate-formalin method. However, the gas-producing mix should be placed in several deep enamel containers set about the room and the fumes allowed to act for not over three hours, as a longer period may injure the eggs in the machine.

Disinfection of Battery Rooms

The principles and practices of disinfecting battery rooms are similar to those of disinfecting an incubator room.

In relation to disinfecting starting batteries, or batteries used for broiler production, conditions may arise which would require very careful disinfection of such equipment. Prior to any attempt at disinfecting a battery, the dropping pans, waterers and feed hoppers should be removed. The battery should then be thoroughly cleaned of all organic matter, a steel brush being very effective for this purpose. The battery should be very carefully sprayed with a 2 per cent solution of cresol or with one of the many good commercial sprays for this purpose on the market. Too much stress cannot be placed on the thoroughness of spraying, as infectious conditions often continue to exist because of inadequacy of applying the spray.

After the battery has been disinfected, the feeding and watering troughs and the dropping pans should be treated in a similar manner, although boiling water could probably be used to advantage in treating such detachable equipment.

Disinfection of Ranges

Disinfection of ranges is hardly what might be termed a practical procedure. This is because of the relatively rapid penetration of pollution into the soil, especially those soils of a sandy type, thus making it difficult to secure germicidal action.

While lime exerts a beneficial effect on the soil, especially highly acid soils, the actual benefit of lime from the standpoint of disinfection is questionable.

Although no guarantee as to the beneficial action from a germicidal standpoint can be made, it is felt that periodic plowing, cultivating and planting in a grazing crop should be beneficial. Before this is done, however, all trash should be raked together and burned, and in cultivating it should be aimed to make the final surface of the ground even in order to avoid constantly damp areas. Exposure to infected ground can best be prevented by keeping adult birds confined in a floored house, by using wire sunporches for growing chicks, and by ranging developing birds on an area not used for this purpose the previous year.

In case it is necessary to use the same free range from year to year, it is suggested that as much of the range intensively used by the birds as possible be plowed each year and seeded to a grazing crop.

Disinfection of Drinking Water

Disinfection of drinking water is carried out solely for the purpose of hindering the spread of disease through this medium. Birds cannot be cured of disease by this means. Germicides have a specific place in the poultry program from this standpoint, but should be used with reserve and only when necessary. Too many poultrymen spend money unnecessarily in disinfecting drinking water when disease does not exist. Ordinary germicides have little effect on coccidia or on worm eggs and disinfecting the water against these is not advised.

Germicidal agents should be used in the drinking water daily when such contagious diseases as bronchitis, laryngotracheitis, coryza, typhoid, cholera, pullorum disease, etc., are present and have been so diagnosed by a competent pathologist. The water should be disinfected daily and for a minimum of two weeks after visible symptoms of the disease have disappeared. To use germicides in the drinking water to excess may do more harm than good.

The following materials are commonly used for disinfecting drinking water:

1. Hypochlorite solutions (Chloride of Lime base). This type of disinfectant is a very effective one for drinking water purposes. It is suggested that a commercial preparation be purchased as these are standardized and full directions for use are given.
2. Copper sulphate (bluestone or blue vitriol).
3. Potassium permanganate. This is found on the market in the form of dark purple crystals or as commercial tablets and acts as an antiseptic rather than a germicide in the drinking water. It is not usually highly effective because it oxidizes rapidly in the presence of organic matter thus losing a portion of its germicidal value. When used, fresh water should be given several times a day and recommended amounts of permanganate added each time. It is not recommended if more effective germicides can be secured. If used, the strength should be 1 part to 500 parts of water.

It is very important that the drinking utensils be carefully scrubbed free of organic material each day before being refilled with the disinfected water. The same should apply if the water containers are filled several times a day. It is best to start each morning with a freshly filled water container.

Plucking Geese Three Times a Year

Plucking of live geese may be successfully done in the spring, summer and early fall months with soft feathers from the breast, sides, abdomen and back taken. It is important, however, that these sections not be plucked entirely clean, and that enough short feathers be left to support the wings.

Birds may be plucked every six weeks or so through the season, or the plucking may be done only twice or three times. Average yearly production of feathers per goose may be expected to run about one pound. Feathers are right for plucking when quills are dry and contain no blood. During the process, a stocking should be placed over the head of the goose, and the bird held in the lap of the person plucking.

Plucking of live geese is not carried on as extensively as in the past, since some persons hold the opinion that the practice is cruel.

—Western Poultry Journal, July, 1940.

¶¶ A CRACKER manufacturer suggests creamed eggs on heated, lightly buttered crackers. Hot creamy eggs ladled over crisp crackers are company and family fare.

—Kathryn Bele Niles, U. S. Egg and Poultry Magazine, June 1940.

Sterilizing Feed Sacks

By J. D. W. COLES

Condensed from The South African Poultry, Pigeon and Bird Magazine

IN South Africa it is a common experience for poultry feed sacks to be sent to five or six different farms in turn. In this way, diseases are spread, as will be illustrated by a few concrete examples.

Farmer A put empty feed sacks under the hover, so that the chicks could sleep on them. The chicks had bacillary white diarrhea, and their droppings infected the sacks. A week later the bags were shaken out and sent back to the feed merchant, who, in turn, refilled them with feed for another farmer. Thus was bacillary white diarhea spread to the second farm.

Farmer B was losing his fowls from some unknown disease. He put three dead birds in a sack and set off by car to the laboratory, where a diagnosis of fowl typhoid was made. The sack was taken home and, in due course, returned to the country trader. Through ignorance on the part of the trader, the bag was not sterilized; hence, fowl typhoid was eventually spread to another farm.

Farmer C knew the value of fowl manure for his garden, so he dried all the droppings and stored them in sacks he had collected for the purpose. After he had spread the manure on the ground, he took the sacks to the local store and exchanged them for some groceries. The storekeeper got an order the next week for feed for a big poultry farmer in the district. Nobody knew why a serious outbreak of coccidiosis occurred on this farm three weeks later.

Farmers must realize the dangers, and insist on the proper sterilization of feed bags. Poultry feed vendors will be helping themselves by complying with these demands, for they will not then have to face embarrassing questions addressed to them by irate farmers. Moreover, they will gain the confidence of the farmers and, by assisting to build up the poultry industry, will in turn reap greater profits for themselves.

How to Sterilize the Sacks

Perhaps the cheapest and best method is to immerse them thoroughly in a cauldron of boiling water for at least ten minutes. The bags should be put into the vessel one by one, so that the water will immediately penetrate to every fibre. Then hang the bags up to dry properly, before they are again filled with feed. It is not necessary to add disinfectants to the water, but the water must be kept boiling all the time. After sterilization, the bags should be put aside on floors or shelves that have been scrubbed clean, and should not be allowed to come into contact with other bags that may be infected.

Not only the poultry feed vendor must sterilize his sacks; the farmer, too, must not dispatch wheat, corn, vegetables, fruit, etc., from his farm in unsterilized bags, if these bags have at any time been in contact with poultry or their droppings.

From the article, "Sterilization of Poultry Food Sacks."
(The South African Poultry, Pigeon and Bird Magazine, July, 1940)

220-Egg Ducks

Three years of research with Khaki-Campbell ducks at the College Farm, New Brunswick, has shown that the first-year egg yield of this breed may easily reach 220 eggs, weighing from 30 to 34 ounces to the dozen, compared with 22 to 26 ounces for hen's eggs. The meat producing tendency of these ducks also is noteworthy. Surplus males were readily brought to a weight of 3½ to 4 pounds, prime condition, in 14 to 16 weeks on a diet of ordinary broiler fattening rations.

The breed was originated on the British Isles at about the time of the first World War, and it is from there that new supplies of high-grade breeding stock would now have to come.

—New Jersey Agriculture, Rutgers University, July-August, 1940.

Fighting Males

The loss among young cockerels being retained for future breeders is often increased by fighting. To prevent this trouble, some poultrymen confine an old cock bird with a group of young cockerels. The theory is that he serves as sort of "policeman" and breaks up any fights before they become serious.

Another precautionary measure is the erection of roosts on the range where the more timid cockerels can escape from their fighting brothers.

—F. A. Raymaley, N. J. Farm and Garden, August, 1940.

MORE than two-thirds of the content of an egg is water and the only protection it has is a shell filled with about 7,000 holes through which it can evaporate.
—H. E. Cosby, The Eggsaminer, July, 1940.

VIEWS OF THE EDITORS

A Heartening Step

Few more gratifying events within the poultry and egg industries could be imagined than the recent formation of a directing agency through which the long-held dream of a coordinated and continuous consumer educational and general publicity campaign is to be converted into reality. Meeting at St. Louis, Mo., on July 22, industry leaders completed the organization, adopted the constitution and by-laws, named the membership and officials and approved the near future and longer term objectives of the National Poultry and Egg Board, as this body is styled, whose stated purposes shall be to increase the use of poultry, eggs and their products through a better understanding of their value, and to initiate and encourage education and research therein.

Much of inspiration is to be found in a close reading of the printed accounts of the St. Louis conclave and in conversation with those in attendance, whose enthusiasm and satisfaction may be readily understood. Here we find expression, almost for the first time, of full and harmonious cooperation toward a common aim freely evidenced by each of the many phases of the industries. It is doubtful if an abler, better balanced or more fairly representative group could have been selected to comprise the National Board itself. And the program as laid out seems eminently sound on every count.

—American Egg and Poultry Review, August, 1940.

Biggest Egg Buyer

The United States government is the country's biggest egg buyer. Since its present buying began last December, it has purchased in excess of two million cases of eggs. It had in storage on August 1 a total of 1,067,522 cases.

Assurance has already been given that these eggs will not compete with eggs going into regular market channels. They will be used for school and playground lunches.

Without a doubt, government buying supported egg prices. Lacking that support, prices could have easily been several cents lower.

Whether or not these purchases will be beneficial to poultry raisers this fall—the period in which profits have to be made — remains to be seen. Government economists predict 3 to 8 per cent fewer layers in flocks at the beginning of 1941 than at the start of 1940. With the rate of egg production advancing, it is easily possible that we might have more eggs in spite of fewer layers. More jobs in the cities as a result of the defense program, however, may bolster egg consumption and improve the egg-feed ratio. We hope so.

But if the government should find it necessary to buy eggs through the fall and early winter (it can buy only when a surplus exists), it will by such a move condemn its own buying program. It will have proved that government efforts to remove a surplus through creation of an artificial market always tend to perpetuate that surplus.

—Everybodys Poultry Magazine, August-September, 1940.

Unemployed Poultry

In this country of unemployed men, idle dollars, and empty buildings, it sometimes goes unnoticed that this lack of productive motion is true also of the animal industry. We rarely recognize that underfed chicks, sealed corn cribs and half empty barns are in precisely the same classification of waste.

There may be nothing to do about it, except to tell the farmer, who hates unemployment, that when he allows his cattle to hunt for their own living on dying pastures, or tells his poultry to shift for themselves on cracked corn and oats, he is putting his livestock on relief, in a position where they will never be able to return to him a dollar's worth of goods.

This year, for a considerable period, feed values were so high that farmers were inclined to put all their livestock on a WPA basis until they could see a better prospect for profitable feeding. Now, with feed prices much lower in relation to produce, they may still feel that they can bring their "reliefers" through to market on subsistence rations. The time is here to tell them to get their pullets and hogs back on the pay roll.

In business, the ratio of raw material and labor to the sales cost of the goods does not always show a book profit. At times, values are out of joint and the manufacturer must look to the long time profit rather than to immediate returns.

Farmers who are frightened out of buying commercial feeds some day will learn this same principle. They will, of course, feed more conservatively at times, but never sacrifice their poultry's future production to a whim of economy during a period of poor prices.

This may appear to be a false, or futile, application of business practice, for many will say that the farmer is disinclined to apply even the most fundamental business tools, such as bookkeeping, to say nothing of using the long range profit theory. The fact is that farmers unconsciously gamble for the profit that may come next fall or next year every time they put seed in the ground. They need only add an element of refinement to that practice to become one of the successful and businesslike feeders, who ask only for a profit 60 per cent of the time.

—Feedstuffs.

Get Your Vitamins in a Well-Balanced Diet

Not so many years ago, even scientists knew little or nothing about vitamins. Now the public is vitamin conscious. And millions of dollars are spent for bottles and boxes of high-priced vitamin concentrates. Yet vitamin-rich, natural foods would cost only a fraction as much.

Eggs, milk, butter, fresh vegetables, fruits, are good examples of vitamin-rich foods. Rich in essential minerals, too.

Eggs and milk are at the top of the list as protective foods recommended by nutrition experts because they furnish essential nutrients that may otherwise be lacking in the daily diet. For babies, growing children, invalids, the old and feeble, eggs and milk are turned to as foods that build strength and vitality, yet are easily handled by delicate stomachs.

Uncle Sam testifies to the high nutritive value of eggs by including them in the free lunches served to undernourished school children. Last year each child received a dozen eggs a month.

The Government is undoubtedly saving itself future trouble by building up the health of these underprivileged children. And it is using carefully selected foods — not capsules—to supply essential vitamins.

Authorities specify at least one egg a day in the well-balanced diet. Two would be even better. With eggs and milk, fresh fruits and vegetables included in the daily diet to build better health for far less money, we shouldn't have to give a thought to vitamin capsules or fancy mineral concoctions.

—Nulaid News, August, 1940.

Losses from Chicken Thieves

When I was a boy, Mother got my brother and I up at one or two o'clock in the morning to investigate a noise in the hen-house. As we sneaked out with an old muzzle-loading shotgun we saw a couple of men run pell-mell out of the rear door of the hen-house. We took after them, but they hid, and although we spent most of the rest of the night hunting for them, they got away. They didn't get any hens that night, but we always lost plenty during the course of a year, and so did all the neighbors, and so do thousands of farmers still.

One of the reasons for this loss from stolen poultry, which totals up to hundreds of thousands of dollars, is the fact that many enforcement officers, and particularly the judges, take chicken thieving altogether too lightly. Some of them act as though it was something of a joke. It's no joke to farmers, particularly now when organized gangs come out from the cities with trucks and sometimes clean out a whole poultry flock in one night. We need better laws, better enforced.

—E. R. Eastman, American Agriculturalist, August 31, 1940.

Pencil Pushing Pays

"To be successful, a poultryman must keep accounts," said Roy E. Jones, Connecticut extension poultryman, addressing the recent summer meeting of the Maryland State Poultry Council.

"The time you spend pushing a lead pencil in keeping poultry account will pay you more than any other thing you do on the farm," he said.

And it's a fact. Poultrymen make large investments in equipment and are always ready to study any new methods that will help to produce better meat and eggs, but they, like most other farmers, seriously neglect the business end of the work.

In order to determine just where money is made and lost and to find out how to increase general efficiency, we must keep accounts. There's no way to keep accounts but to take pencil and book in hand and set down the figures. In the none-too-certain future, however, record keeping poultrymen may be the ones who stay in business and make money while others (who may be just as good chicken raisers) will fail.

—Everybodys Poultry Magazine, August-September, 1940.

Use of Liquid Eggs Has Grown

The growth of egg breaking operations in the United States can be attributed largely to the change during the past two decades from home cooked foods to prepared foods. Commercial manufacturers of bakery goods, salad dressing, candies and other confectioneries, all have become large users of liquid or frozen eggs, and in recent years dried eggs also. They have found that liquid, frozen and dried eggs are much more convenient to use than eggs held in shell form. They can be purchased in any form desired and in quantity for the particular purpose needed.

—"Liquid Egg Production, 1938-39," issued by the U. S. Dept. of Agriculture, Washington, D. C.

◄◄ SINCE the inauguration of the poultry exhibition at the London Zoo, the parrots have begun clucking at their keeper.

—Eggs, London, England, July 17, 1940.

POULTRY STATISTICS

Hens on Farms — Rate of Lay

Number of Hens per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	July 1	Aug. 1	July 1	Aug. 1	Aggregate Jan.-Aug.	July 1	Aug. 1	Aggregate Jan.-Aug.
North Atl.									
1929-38 (Av.)	96.9	77.4	75.1	48.3	44.4	363	37.5	33.6	313
1939	98.4	75.4	73.3	50.1	46.3	389	37.9	34.2	330
1940	97.2	74.2	71.6	50.8	46.9	386	37.8	33.7	326
E. N. Cent.									
1929-38 (Av.)	108.8	83.8	79.5	45.2	39.4	333	38.1	31.6	318
1939	107.3	81.6	76.7	48.0	42.7	360	39.4	32.9	338
1940	110.8	83.5	79.4	47.8	42.7	353	40.1	34.0	340
W. N. Cent.									
1929-38 (Av.)	118.8	91.8	85.5	42.2	35.3	305	38.6	30.4	318
1939	113.1	87.4	81.7	46.4	39.1	338	40.4	31.9	339
1940	118.6	92.3	84.9	46.3	39.6	328	42.7	33.8	347
South Atl.									
1929-38 (Av.)	58.9	46.9	45.6	40.6	36.5	318	18.9	16.5	164
1939	59.9	45.9	44.0	42.4	38.8	345	19.1	16.8	175
1940	59.9	47.1	45.6	43.0	40.4	336	20.0	18.1	178
South Cent.									
1929-38 (Av.)	65.0	49.4	49.0	38.4	33.0	307	19.0	16.2	172
1939	63.6	50.8	49.0	40.7	35.1	330	20.6	17.2	186
1940	65.8	49.4	47.7	42.1	36.6	314	20.7	17.3	176
Western									
1929-38 (Av.)	73.2	60.4	59.3	48.9	43.9	361	29.6	26.4	237
1939	72.6	57.7	56.9	48.4	44.7	373	28.1	25.7	238
1940	73.7	58.9	56.4	48.4	44.4	376	28.6	25.1	241
United States									
1929-38 (Av.)	84.5	65.6	63.1	43.2	37.6	324	28.0	23.5	238
1939	82.8	64.3	61.3	45.9	40.4	350	29.0	24.4	252
1940	85.1	65.3	62.0	46.2	41.0	342	29.8	25.1	252

Total July production by farm flocks was 3,373 million eggs or 9,369,000 cases, about 3 per cent greater than during July last year, and the largest production for that month since 1931. The record high July production level of 3,639 million eggs or 10,108,000 cases was established in 1929. The aggregate total production of eggs for the 7 months, January to July, inclusive, was 27,207 million eggs, or 75,580,000 cases, an increase of about 1 per cent over the production of the same months in 1939, and about 3 per cent over the 10-year (1929-38) average January-July production.

The production rate of 1,338 eggs per 100 layers during July, was about 1 per cent higher than in 1939, but 1 per cent lower than in 1938, when a record high July average of 1,356 eggs per 100 layers was reached. This year's July rate was about 6 per cent higher than the 10-year (1929-38) July average. By geographic areas, the July rate was higher than last year in the North Atlantic, South Atlantic and South Central areas, but lower in the North Central and Far Western Divisions where weather conditions have been unfavorable for best performance. Compared with the 10-year average, July production was higher in all areas except the Far West, where the extreme commercialization of the industry had many years ago lifted the production rate to high levels.

The estimated number of birds in laying flocks during July of this year was 252,129,000 compared with 246,351,000 last year. The relatively low price of eggs compared with the cost of feed for poultry during the last 10 months has led producers to dispose of more than the usual proportion of layers and to reduce sharply the number of chickens raised this year. As a result, the gain shown in earlier months over the low levels of numbers in recent years has not been maintained. Average numbers during July were only 2 per cent greater than a year earlier, while on August 1 the reported average number of layers in sample farm flocks had fallen to only 1 per cent above numbers on that date last year. July numbers of layers were still about 7 per cent greater than the low point touched in July 1938, but they were 2 per cent below the 10-year (1929-38) July average, and 15 per cent below the record high July level in 1927. By regions, July numbers of layers were above last year by from 5 to 7 per cent in the West North Central, South Atlantic and Far Western areas, and 1 to 2 per cent in the East North Central and North Atlantic sections, but were about 4 per cent lower in the South Central area.

—Comment from U.S.D.A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Receipts of eggs at the four principal terminal markets in July exceeded those of July 1939 by 10 per cent, but since August 1 to date, the quantities received have just about equalled receipts during the corresponding period of August last year. In the case of Central Western packing plants, weekly reports during July showed substantial increases over a year earlier, the increases toward the latter part of the month being in excess of 40 per cent. By the middle of August, however, this picture had changed, and receipts were actually 4 per cent less than the previous year. Even on the Pacific Coast, where country plants up to August 1 were still receiving more eggs than last year, the increases had tapered down, and for the first 2 weeks in August, fewer eggs were received during the corresponding period in 1939. Rather heavy reductions in Washington and Oregon were somewhat offset by continued slight increases in California.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Receipts of Eggs (Cases) at 4 Markets*

Geographic Section	July 1940	July 1939	% change	Jan. to July, Inc. 1940	Jan. to July, Inc. 1939	% change
New England	24,225	18,365	+31.9	295,159	231,067	+ 27.7
Middle Atlantic	157,801	134,784	+17.1	1,452,060	1,336,623	+ 8.6
South Atlantic	16,502	15,369	+ 7.4	199,215	209,712	− 5.0
East North Central	225,499	183,872	+22.6	2,303,925	2,145,961	+ 7.4
West North Central	705,144	664,637	+ 6.1	5,834,410	5,914,716	− 1.4
South Central	1,595	981	+62.6	73,426	53,690	+ 36.8
Mountain	36,241	26,009	+39.3	252,840	186,280	+ 35.7
Pacific	31,767	44,097	−28.0	287,850	180,786	+ 59.2
Miscellaneous	353	323	+ 9.3	3,590	3,557	+ 0.9
TOTAL	1,199,127	1,088,437	+10.2	10,702,475	10,262,392	+ 4.3

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic Section	July 1940	July 1939	% change	Jan. to July, Inc. 1940	Jan. to July, Inc. 1939	% change
New England	1,778,698	1,991,817	−10.7	7,614,305	8,214,147	− 7.3
Middle Atlantic	5,752,836	7,123,703	−19.2	26,041,577	24,349,846	+ 6.9
South Atlantic	1,989,602	1,590,097	+25.1	14,961,120	10,311,124	+ 45.1
East North Central	2,420,544	3,147,381	−23.1	20,449,259	21,823,127	− 6.3
West North Central	12,734,575	11,784,490	+ 8.1	79,625,069	64,850,850	+ 22.8
South Central	843,071	786,578	+ 7.2	11,075,570	12,484,247	− 11.3
Mountain	270,391	406,121	−33.4	3,152,419	2,376,617	+ 32.6
Pacific	661,757	633,496	+ 4.5	9,796,457	4,952,128	+ 97.8
Miscellaneous	–	34,117	–	128,680	34,117	+277.2
TOTAL	26,451,474	27,497,800	− 3.8	172,844,456	149,396,203	+ 15.7

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
August 3	21	20,062	−1.78	+9.58
August 10	29	22,516	−7.62	−3.65
August 17	28	23,427	+1.08	−0.23
August 24	30	27,168	+6.37	+3.38
August 31	29	25,647	+0.28	+4.69

—Compiled from U.S.D.A. market reports.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1940	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1940	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1940	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) % Chg.
Aug. 3	90,280	72,476	+24.56	4,238	3,263	+29.85	1,634	1,499	+ 8.98	2,492	1,642	+51.71
Aug. 10	75,392	75,052	+ 0.45	4,414	2,933	+50.49	1,740	1,452	+19.85	2,551	1,374	+85.66
Aug. 17	68,526	71,223	− 3.79	4,355	3,322	+31.06	2,036	1,892	+ 7.63	2,209	1,343	+64.50
Aug. 24	67,588	61,333	+10.20	4,453	3,686	+20.80	2,382	2,202	+ 8.16	1,970	1,398	+40.98
Aug. 31	63,720	56,095	+13.59	4,933	4,053	+21.64	2,856	2,481	+15.10	1,974	1,464	+34.81

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	1940	1939	% Change from Previous Week	% Change from Last Year
August 3	60	51,625	50,675	−1.32	+1.87
August 10	60	50,597	52,167	−1.69	−3.01
August 17	60	50,919	52,862	+0.64	−3.68
August 24	59	49,907	53,531	−1.48	−6.77
August 31	60	49,786	54,172	−0.69	−8.10

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	Avg. Egg Price per Doz. (Dollars) 1940	1939	1938	Avg. Feed Cost per 100 lbs. (Dollars) 1940	1939	1938
August 1	9.5	6.8	6.1	.20	.241	.275	1.89	1.62	1.68
August 8	8.6	6.8	5.3	.22	.238	.294	1.88	1.62	1.56
August 15	7.5	7.0	5.	.217	.239	.309	1.84	1.68	1.55
August 22	7.3	7.0	4.9	.252	.239	.316	1.84	1.68	1.55
August 29	7.2	6.5	4.5	.257	.256	.346	1.85	1.67	1.54

—Compiled by N. Y. State Dept. of Agriculture and Markets

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration 1940	1939	10-Yr. Avg. 1929-38	Price of Fresh Graded Firsts (Dollars) 1940	1939	Cost of Ration per 100 lbs. (Dollars) 1940	1939
August 3	7.78	7.61	6.48	.157	.152	1.22	.89
August 10	7.54	6.05	6.56	.157	.152	1.18	.92
August 17	7.17	6.15	6.36	.163	.151	1.17	.93
August 24	7.08	6.33	6.11	.165	.151	1.16	.96
August 31	6.78	6.13	5.98	.174	.16	1.18	.98

—Compiled from U.S.D.A. market reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	1937	1936	1935
July	7.54	7.36	6.28	8.91	7.75	6.24
January-July	9.39	7.65	7.82	9.80	7.53	7.33
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

A general advance of egg prices in all of the major markets and for all grades was a feature of the August egg situation, the Agricultural Marketing Service reports. In the case of higher quality grades, particularly sharp increases have been reported. At New York City, Mixed Color Firsts have advanced over 2 cents since August 1, while Nearby Specials and Pacific Coast eggs average about 5 cents higher. On the Pacific Coast, top grades have advanced 4 to 5 cents, and lower grades mostly about 1 to 2 cents. In general, prices are slightly higher than a year ago.

Associated with recent price advances, are changes in the supply situation, both with respect to current marketings, and storage reserves. July egg production was reported to have been the largest for that month since 1931, but it was also reported that on August 1 the number of layers on hand had fallen to only about 1 per cent above last year's figure, together with a decrease of 10 per cent in the number of young pullets on hand. Later market statistics seem to reflect such conditions.

The lighter marketings of eggs reduced supplies of eggs in the terminal markets to the point where prices could be maintained without the support of Government buying. Purchases by the Surplus Marketing Administration in August approximated only 68,000 cases, which was less than half the quantity bought in July. The bulk of the August purchases were on direct offers, and were made in the Northeastern States and Midwestern States. No purchases were made in the Southwestern or Pacific Coast States. Total S.M.A. purchases since December, when the current season's program began, approximate 2,337,000 cases.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

1940 Egg Prices at New York City

Kind	Aug. 2	Aug. 9	Aug. 16	Aug. 23	Aug. 30	Aug. 30, '39
Mixed Color Firsts	16¾	16¾	17½	17¾-18	19	16¾
Nearby and Midwestern White Premium Marks	22½-25	27½-30	26½-29	26½-29	28½-31	28½-31
Nearby and Midwestern White Specials	22	27	25-26	26	27½-28	27½-28
Pacific Coast Specials	27½-28	30½-33¼	31½-32½	31-32½	33½-34½	30½-34½
Nearby and Midwestern Br. Exchange Specials	21¼-21½	22½-23	24-24½	24½	25½-26	24

Mid-Month Farm Prices of Eggs Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	19.9	23.2	26.2	30.1	28.8
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4	16.4					

Eggs in Storage

This year's peak of storage holdings of shell eggs was reached about August 1. Since that time there has been a gradual out-of-storage movement each week. August 1 total stocks were 7,773,000 cases, approximately 10 per cent larger than a year earlier. Included in this quantity were 1,067,500 cases belonging to the Surplus Marketing Administration, leaving net commercial stocks of only 6,705,500 cases. Thus, on the basis of commercial stocks only, there was an August 1 decrease from last year of approximately 300,000 cases. Storage reductions since August 1 in the 35 cities for which weekly reports are available have been heavier than those of a year ago. During the 3 weeks period ending August 24, 35 cities' stocks were reduced 236,600 cases, of which 23,500 cases were non-commercial, leaving a net commercial stocks reduction of 213,100 cases, compared with 165,700 cases moved from storage during the corresponding 3 weeks of 1939. Stocks in the 35 cities on August 24 were 5,751,418 cases (4,771,300 commercial), compared with 5,130,201 cases last year. Net weekly reductions of frozen eggs in the 35 cities have been about 10 per cent heavier than during the corresponding period of last year. Total U. S. holdings of this product on August 1 were 154,929,000 pounds.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Storage Holdings of Eggs

Kind	Aug. 1 5-Year Avg. 1935-39	Aug. 1 1939	July 1 1940	Aug. 1 1940	% Change Aug. '39-Aug. '40
		(Thousands)			
Shell Eggs (cases)	7,487	7,024	7,513	7,773**	+10.6
Frozen Eggs (lbs.)	135,665	144,359	150,366	154,929	+ 7.3
Frozen Case Equivalent (cases)*	3,876	4,125	4,296	4,427	+ 7.3
Total (cases)	11,363	11,149	11,809	12,200	+ 9.4

* Frozen eggs are converted on the basis of 36 lbs. to the case.
** Includes 1,067,522 cases owned by the Surplus Marketing Administration for relief distribution.

Poultry Meat Prices

Mid-Month Farm Prices of Chickens Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	14.9	15.2	14.6	14.1	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3	13.6					

The market on live poultry during August has been without any special features, except that prices have worked slightly higher. Receipts at Central Western packing plants have recently been running sharply heavier than a year ago on both young stock and fowl. For the first half of August, the increases in total receipts averaged more than 30 per cent above a year earlier, mostly due to the heavier marketings of fowl. The increases on the latter class alone averaged greater than 60 per cent. In some areas, heavier fowl marketings are associated with culling.

Receipts of dressed poultry at the four markets in July were about 4 per cent less than a year earlier, but during August the trend was reversed, and August receipts have shown an increase of fully 20 per cent, most of the increase taking place about the middle of the month. This change in terminal market receipts is coincident with the heavier receipts of live poultry at country packing plants.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	Aug. 1 5-Year Avg.	Aug. 1	July 1	Aug. 1	% Change
	(Thousand Pounds)				
	1935-39	1939	1940	1940	Aug. '39-Aug. '40
Broilers	6,956	7,494	4,842	6,290	– 16.1
Fryers	2,133	2,490	1,774	1,813	– 27.3
Roasters	4,965	5,963	4,613	3,601	– 39.7
Fowls	9,952	12,925	16,247	18,326	+ 41.7
Turkeys	12,382	14,211	36,724	29,530	+107.7
Ducks	6,634	7,849	5,028	8,230	+ 4.8
Miscellaneous	12,594	13,986	10,598	11,790	– 15.8
Unclassified			2,510	2,781	
Total	55,616	64,918	82,336	82,361	+ 26.8

A factor of current importance is the recent storage movement of frozen poultry. In the month of June, this year, there was a net increase in total stocks of approximately 5½ million pounds, compared with an increase of but 600,000 pounds in June 1939. In July, total stocks decreased only 25,000 pounds, compared with a 2¼ million pounds decrease last year. The result has been successive gains over corresponding periods of 1939. On June 1, the increase over a year earlier was 10 million pounds, on July 1, 15 million pounds, and on August 1, 17 million pounds. In the 35 cities there have been slight increases in holdings since August 1, and according to the last available report as of August 24, stocks were 20 million pounds heavier than a year earlier. This is a further gain over 1939 in these same cities, stocks at the beginning of August being 18 million pounds greater than those of the corresponding period of last year.

—Comment from U.S.D.A. Monthly Egg and Poultry Markets Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During July			Salable Chicks Hatched During June			Chicks booked Aug. 1 for Aug. or later delivery			
		1939	1940	% chg.	1939	1940	% chg.	No. of Plants	1939	1940	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	10	1,745	1,429	–18	978	1,170	+20	4	1,461	806	– 45
Mid. Atl.	12	437	347	–21	224	251	+12	10	198	134	– 32
S. Atl.	25	732	734	–	433	653	+51	10	397	402	+ 1
E. N. Cent.	37	448	689	+54	487	711	+46	23	118	182	+ 54
W. N. Cent.	16	486	314	–35	555	340	–39	6	22	19	– 14
S. Cent.	9	137	124	– 9	166	117	–30	5	31	69	+122
Mountain	8	78	52	–33	54	39	–28	3	3	3	–
Pacific	22	556	530	– 5	383	369	– 4	16	530	596	+ 12
U. S.	139	4,619	4,219	– 9	3,280	3,650	+11	77	2,760	2,211	– 20

With most hatcheries closed until after the first of the year, the cumulative change from last year in the production of baby chicks by commercial hatcheries becomes significant. A summary of the data obtained by the Agricultural Marketing Service during the 7 months—January through July—points to a decrease of 9 per cent under the corresponding 7 months of last year. This decrease is closely related to a decrease of 10 per cent in the number of young chickens in farm flocks July 1 compared with the same time last year. With production of baby chicks by commercial hatcheries in 1939 apparently reaching an all-time high record, the reduction in 1940 evidently is an adjustment to more normal levels of production.

The major cause for the drop in the 1940 production of baby chicks is obvious. After September 1939, the feed-egg ratio became unfavorable to egg producers and continued to be unfavorable throughout the 1940 hatching season. It took 5½ dozen eggs to buy 100 pounds of feed during the hatching season of 1939, for example whereas during the 1940 hatching season it took 6 1-3 dozen eggs to buy 100 pounds of feed.

All sections of the country, with the exception of the South Atlantic States, showed decreases in the number of hatchery chicks produced during the first 7 months of 1940 compared with the number produced in the corresponding 7 months of last year. The South Atlantic States reported a significant increase of 4 per cent in view of a 21 per cent increase in the number of baby chicks produced in that region in 1939 compared with 1938. Although this region produced only 8 per cent of the baby chicks of the country, according to the 1937-38 Hatchery Survey, the changes in the regional production of baby chicks since then indicates that these States are becoming increasingly important in the Commercial Hatchery Industry.

The smallest decrease for the 1940 hatchery season, 3 per cent, was reported by the East North Central States, while the largest decrease, 26 per cent, was reported by the Pacific Coast States. The decrease on the West Coast is from a very high production in that region during 1939 when a 36 per cent increase in the production over 1938 was reported by commercial hatcheries. A decrease of 14 per cent under last year was reported for the South Central States. The West North Central States reported a decrease of 12 per cent. Decreases of 8 per cent and 7 per cent, respectively, were reported for the Middle Atlantic and Mountain States.

There is some indication that the current production of baby chicks will slow up somewhat more than seasonally. A 9 per cent decrease in the number of eggs set during July compared with July last year was reported. The weakness shown in broiler prices during the latter part of July has probably made some of the broiler producers less optimistic than they were a month or so earlier. Seventy-seven plants reported a decrease of 20 per cent in the number of chicks booked August 1 for later delivery compared with the same time last year.

—Comment from U.S.D.A. Poultry and Egg Production Report.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		July 1940	July 1939	Jan. to July, Inc. 1940	Jan. to July, Inc. 1939
Eggs in shell	(doz.)	320,304	167,188	3,032,559	1,437,815
Eggs and Yolks, frozen, dried or canned	(lbs.)	7,776	Not available	98,894	Not available
Live Poultry	(lbs.)	4,216	9,558	76,211	123,186
Dressed Poultry	(lbs.)	122,680	249,223	842,942	1,413,112

Imports of Eggs and Poultry

Eggs in shell	(doz.)	15,142	14,202	125,688	183,447
Whole Eggs, dried	(lbs.)	1,000	3,500	29,250	35,500
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	297,889	107,400	1,183,815	205,325
Yolks, frozen	(lbs.)	0	0	0	25,330
Egg Albumen, dried	(lbs.)	23,800	28,300	183,200	328,283
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	184,118	74,986	757,435	446,409
Dressed Poultry	(lbs.)	12,248	6,638	292,569	119,200
Poultry, prepared	(lbs.)	2,262	23,871	224,592	588,195

Egg Breaking Operations

Egg Breaking Operations During July, 1940

Commodity		Quantities reported to date for July 1940	Same Firm Comparison		
			July 1939	July 1940	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		4,107,306	4,650,255	4,107,306	− 12
Mixed eggs (plain)		1,718,325	1,477,494	1,718,325	+ 16
Mixed eggs (emulsions, also with sugar, salt, etc.)		740,595	238,110	740,595	+211
Egg whites (all descriptions)		3,344,508	2,698,776	3,344,508	+ 24
Egg yolks packed	Without salt, sugar, etc.	1,702,951	1,086,934	1,702,951	+ 57
	With sugar	690,797	1,110,748	690,797	− 38
	With salt	311,698	432,808	311,698	− 28
	All yolk emulsions, including glycerine	0	0	0	–
Total—pounds		12,616,180	11,695,125	12,616,180	+ 8
Total—case egg equivalent		360,462	334,146	360,462	
Number of firms reporting*		51	51		

* Firms, not plants. Some firms operate more than one plant.

Advantages of Tunnel Nests

The number of soiled and broken eggs is materially reduced when tunnel nests are used, reported Walter A. Spearin, Salisbury, Md., speaking before members of the Maryland State Poultry Council. Said Spearin, regarding his nests:

"We use a nest 8 feet long with one portion making two compartments 1-foot by 4-feet. The birds enter these nests through a rear alley and eggs are collected by lowering hinged boards at the front. At each end of the rear passageway we have a small door, so that at night we can close the nests and keep birds from roosting in them.

"We like nest compartments 4 feet long much better than single 1-foot by 1-foot nests. With the small nests, 3 or 4 birds all try to get in the same nest, which naturally causes a lot of soiled or broken eggs. Also, our nests are dark, which, I think, the birds prefer.

"When we want to clean out the nests, we can slip out the 8-foot section, take it outside, turn it bottom upward, scrape it, and it is clean. We use sugar cane litter as it absorbs a lot of moisture and seems to keep the eggs cleaner than anything else we have tried. Shavings are also good, but the birds seem to have a tendency to continually scratch them out of the nests. One foot of nest space is allowed for each 4 hens."

RESULTS OF LAYING TESTS

There is no let-up in the Hanson Leghorn camp at the Storrs Test. These birds refuse to rest on their laurels. During July they shelled out 352 eggs, good for 384.3 points, bettering all other contest pens. They led their next nearest competitor by 284 points. And that pen happens to be another Hanson pen!

Third highest pen to August 1 is W. L. Gilbert Home's Leghorn outfit at Storrs. Next is Erath Egg Farm's Leghorn team at Texas, with Horseshoe Poultry Ranch's Leghorns close on their heels. E. B. Parmenter's Reds at Rhode Island occupy sixth place, Hardin's Reds hold seventh best spot, and Mettler's Reds are in eighth place. Amidon's Barred Rocks at Pennsylvania and Anderson's Reds at Storrs complete this class of top notch performers.

Through the 305 days thus far, Parmenter's best hen at Rhode Island has turned out 296 eggs and has accumulated 322.35 points. Hanson's high Leghorn at Storrs has duplicated the Red bird's production feat, and her point total is 317.25.

Top New Hampshire pen through July is Thomas Mettler's team at Pennsylvania. Just 13 points behind it are Eben Wood's birds at Storrs.

Norman W. Amidon's Barred Rocks continue to dominate the Barred Rock breed, but R. C. Cobb's birds at Storrs threaten their position.

Riley Poultry Farm has established a lead in the White Rock breed which they should be able to hold during the remaining 52 days of this year's trial run.

Twenty Highest Pens in All Breeds to August 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3477	3667.55	Storrs
J. A. Hanson	White Leghorn	3189	3383.20	Storrs
W. L. Gilbert Home	White Leghorn	3162	3345.85	Storrs
Erath Egg Farm	White Leghorn	3150	3343.00	Texas
Horseshoe Poultry Ranch	White Leghorn	3244	3339.80	Texas
E. B. Parmenter	Rhode Island Red	3068	3332.10	Rhode Island
H. J. Hardin	Rhode Island Red	3118	3309.45	Georgia
Thomas Mettler	Rhode Island Red	3118	3261.95	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	3134	3246.55	Pennsylvania
R. W. Anderson	Rhode Island Red	3059	3241.25	Storrs
George M. Heberer	White Leghorn	3110	3240.05	Texas
To-Lani Farm	Rhode Island Red	3216	3235.90	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	3015	3232.65	Passaic, N. J.
R. C. Cobb	Barred Rock	3096	3210.30	Storrs
George A. Pearce	White Leghorn	2992	3156.20	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	2931	3155.55	New York State
Guy A. Leader	White Leghorn	3002	3142.35	Storrs
A. E. Guinn	White Leghorn	3102	3141.55	Georgia
Thomas Mettler	Rhode Island Red	2991	3134.55	Passaic, N. J.
W. C. Mullins	Rhode Island Red	2960	3128.25	Texas

High Pen in Each Standard Test to August 1—(305 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3477	3667.55	Storrs
Erath Egg Farm	White Leghorn	3150	3343.00	Texas
E. B. Parmenter	Rhode Island Red	3068	3332.10	Rhode Island
H. J. Hardin	Rhode Island Red	3118	3309.45	Georgia
Thomas Mettler	Rhode Island Red	3118	3261.95	Hunterdon, N. J.
Norman W. Amidon	Barred Rock	3134	3246.55	Pennsylvania
Alampi Poultry Breed. Farm	Rhode Island Red	3015	3232.65	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	2931	3155.55	New York State
E. B. Parmenter	Rhode Island Red	2958	3112.25	Western New York
Ford's Riverbank Farm	Rhode Island Red	2998	3110.75	Maine
W. C. Eckard	White Leghorn	2899	3089.55	Michigan
Pinebreeze Farm	White Leghorn	2886	3007.50	Florida
A. E. Danish	White Leghorn	2878	2997.55	Central New York
Nelson's Leghorn Breed. Farm	White Leghorn	2809	2931.10	Oklahoma
Missouri Valley Hatchery	Rhode Island Red	2688	2863.05	Missouri
W. A. Seidel	White Leghorn	2660	2787.00	Arizona

High Pen in Each Standard Test for July

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	352	384.30	Storrs
Erath Egg Farm	White Leghorn	350	374.60	Texas
Longview Poultry Farm	White Leghorn	328	345.10	Central New York
Lone Oak Leghorn Farm	White Leghorn	333	344.35	Florida
Kauder's Pedigreed Leghorns	White Leghorn	317	338.50	Western New York
Aseltine Poultry Farm	White Leghorn	305	331.25	Michigan
Lone Oak Leghorn Farm	White Leghorn	313	325.15	Georgia
P. S. Dickey	White Leghorn	319	312.85	Arizona
Missouri Valley Hatchery	White Leghorn	297	311.75	Pennsylvania
Elk City Hatchery	White Leghorn	301	309.90	Oklahoma
J. A. Hanson	White Leghorn	295	307.55	Passaic, N. J.
Creighton Brothers	White Leghorn	285	306.65	Rhode Island
Ford's Riverbank Farm	Rhode Island Red	290	305.10	Maine
Hill Hatchery	White Leghorn	281	305.00	Missouri
C. A. Richardson	New Hampshire	277	301.45	New York State
Thomas Mettler	White Leghorn	279	300.75	Hunterdon, N. J.

High Pen in Each Breed to August 1—(305 Days)

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	3477	3667.55	Storrs
E. B. Parmenter	Rhode Island Red	3068	3332.10	Rhode Island
Norman W. Amidon	Barred Rock	3134	3246.55	Pennsylvania
Thomas Mettler	New Hampshire	3023	3109.30	Pennsylvania
Riley Poultry Farm	White Rock	2768	2877.40	Oklahoma
Harvey E. Taylor	White Wyandotte	2831	2858.90	Texas
Raymond S. Thomas	Ancona	2541	2543.40	Pennsylvania
Laclede Hatchery	Black Australorp	2390	2363.10	Oklahoma
E. J. Covey	Black Minorca	2178	2262.70	Texas
T. D. Brown	White Minorca	2048	2147.75	Texas
Raymond Murphy	White Giant	1982	2100.50	Missouri
Lindstrom Poultry Farm	Buff Minorca	2042	1966.85	Texas
Harry L. Phillips	Columbian Rock	1775	1896.70	Missouri
Cedarlaid Poultry Farm	Brown Leghorn	1965	1695.30	Florida
Famous Poultry Farms	Leghorn Cross	1687	1685.80	Georgia
Charles C. Ward	Buff Leghorn	1676	1674.50	Oklahoma
S. E. Raymond	Lamona	1553	1650.20	Storrs
Iowa Master Breeders	Buff Orpington	1537	1631.30	Missouri
R. L. Jones	Light Brahma	1223	1293.25	Hunterdon, N. J.
Walter Dobe	Barnevelder	1029	1093.70	Western New York
Daniel S. Riker	Buff Rock	425	393.55	Maine

High Hen in Each Breed to August 1—(305 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	296	322.35	Rhode Island
J. A. Hanson	White Leghorn	296	317.25	Storrs
George A. Pearce	New Hampshire	275	299.10	Passaic, N. J.
Norman W. Amidon	Barred Rock	279	292.85	Pennsylvania
Earl C. Dunham	White Rock	263	285.65	Georgia
T. D. Brown	White Minorca	259	283.05	Texas
Harvey E. Taylor	White Wyandotte	262	269.40	Texas
Famous Poultry Farms	Leghorn Cross	236	240.40	Georgia
Norman Stansfield	Black Australorp	220	239.80	Rhode Island
Raymond S. Thomas	Ancona	224	236.55	Pennsylvania
Hillview Poultry Farm	White Giant	217	225.40	Texas
Iowa Master Breeders	Buff Orpington	209	224.55	Missouri
Harry L. Phillips	Columbian Rock	200	217.20	Missouri
E. J. Covey	Black Minorca	205	213.05	Texas
R. L. Jones	Light Brahma	199	212.70	Hunterdon, N. J.
Henry F. Waitt	Buff Minorca	195	210.35	Maine
S. E. Raymond	Lamona	180	197.45	Storrs
Chas. C. Ward	Buff Leghorn	172	175.65	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	199	173.35	Florida
Walter Dobe	Barnevelder	150	163.00	Western New York
Daniel S. Riker	Buff Rock	114	120.50	Maine

High Hen in Each Standard Test to August 1—(305 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	296	322.35	Rhode Island
J. A. Hanson	White Leghorn	296	317.25	Storrs
W. A. Seidel	White Leghorn	295	312.90	Texas
H. J. Hardin	Rhode Island Red	288	311.20	Georgia
Booth Farms and Hatchery	White Leghorn	288	310.35	Florida
George A. Pearce	Rhode Island Red	286	308.70	Passaic, N. J.
Thomas Mettler	Rhode Island Red	285	305.80	Hunterdon, N. J.
H. Guy Loose	White Leghorn	275	301.30	Pennsylvania
J. O. Coombs and Son	White Leghorn	276	298.85	Oklahoma
Ford's Riverbank Farm	Rhode Island Red	272	295.90	Missouri
J. A. Hanson	White Leghorn	279	293.65	Western New York
Ford's Riverbank Farm	Rhode Island Red	268	292.55	Maine
Nelson's Leghorn Breed. Farm	White Leghorn	273	290.60	Arizona
J. J. Warren	Rhode Island Red	266	287.30	Michigan
Redbird Farm	Rhode Island Red	262	283.85	New York State
Holser's Valley Farm	White Leghorn	261	280.10	Central New York

High Hen in Each Standard Test for July

Owner	Breed	Eggs	Points	Test
Creighton Brothers	White Leghorn	31	34.10	Missouri
J. A. Hanson	White Leghorn	31	34.10	Storrs
Foreman Poultry Farm	White Leghorn	31	34.10	Western New York
David Cohen	Barred Rock	31	34.10	Central New York
Hillview Poultry Farm	White Leghorn	31	34.05	Texas
Rochelle Hatchery	White Leghorn	31	33.85	Michigan
O. C. French	White Leghorn	31	33.20	Florida
P. J. Osborne	White Leghorn	30	33.00	Maine
Dembro Poultry Farm	White Leghorn	30	33.00	Passaic, N. J.
H. Guy Loose	White Leghorn	30	32.95	Pennsylvania
E. B. Parmenter	Rhode Island Red	31	32.95	Rhode Island
Thomas Mettler	Rhode Island Red	30	32.70	New York State
H. J. Hardin	Rhode Island Red	30	32.65	Georgia
Thomas Mettler	Rhode Island Red	30	32.40	Hunterdon, N. J.
Iowa Master Breeders	White Leghorn	29	31.55	Oklahoma
Colonial Poultry Farm	White Leghorn	27	29.45	Arizona

Twenty Highest White Leghorn Pens in Country to August 1

Owner	Eggs	Points	Test
J. A. Hanson	3477	3667.55	Storrs
J. A. Hanson	3189	3383.20	Storrs
Wm. L. Gilbert Home	3162	3345.85	Storrs
Erath Egg Farm	3150	3343.00	Texas
Horseshoe Poultry Ranch	3244	3339.80	Texas
George M. Heberer	3110	3240.05	Texas
George A. Pearce	2992	3156.20	Hunterdon, N. J.
Guy A. Leader	3002	3142.35	Storrs
A. E. Guinn	3102	3141.55	Georgia
Kauder's Pedigreed Leghorns	2940	3127.65	Storrs
J. A. Hanson	3049	3123.35	Passaic, N. J.
Kauder's Pedigreed Leghorns	2929	3111.60	Storrs
Sand Springs Home Farm	3075	3098.85	Texas
Piho Brothers	2928	3094.50	Storrs
W. C. Eckard	2899	3089.55	Michigan
I. Commer	3058	3085.75	Texas
Alfred MacMillan	2887	3085.65	Texas
Rochelle Egg Farm and Hatchery	3062	3071.90	Texas
George M. Heberer	2891	3066.65	Texas
C. O. Davis	2885	3060.20	Texas

Twenty Highest Rhode Island Red Pens in Country to August 1

Owner	Eggs	Points	Test
E. B. Parmenter	3068	3332.10	Rhode Island
H. J. Hardin	3118	3309.45	Georgia
Thomas Mettler	3118	3261.95	Hunterdon, N. J.
Ralph W. Anderson	3059	3241.25	Storrs
To-Lani Farm	3216	3235.90	Georgia
Alampi Poultry Breeding Farm	3015	3232.65	Passaic, N. J.
E. B. Parmenter	2931	3155.55	New York State
Thomas Mettler	2991	3134.55	Passaic, N. J.
W. C. Mullins	2960	3128.25	Texas
Alampi Poultry Breeding Farm	3062	3127.80	Passaic, N. J.
E. B. Parmenter	2958	3112.25	Western New York
Ford's Riverbank Farm	2998	3110.75	Maine
J. J. Warren	2901	3076.65	Texas
E. B. Parmenter	2883	3075.15	Storrs
W. H. Wilson	3126	3068.65	Georgia
Crooks Farm	2882	3060.15	Storrs
R. E. & F. H. Kendrick	2837	3059.35	Rhode Island
J. J. Warren	2904	3053.80	Storrs
Walter H. Rogler	2873	3040.25	Storrs
Glendale Poultry Farm	2794	3027.50	Rhode Island

Twenty Highest New Hampshire Pens in Country to August 1

Owner	Eggs	Points	Test
Thomas Mettler	3023	3109.30	Pennsylvania
Eben Wood	2849	3096.75	Storrs
Joachim Breeding Farm	2803	3040.00	Storrs
George A. Pearce	2963	2995.05	Passaic, N. J.
Joachim Breeding Farm	2827	2987.70	Pennsylvania
Lamar W. Sexton	2846	2952.50	Hunterdon, N. J.
Wene Chick Farm	2740	2949.55	Storrs
James H. Horne	2730	2914.35	Storrs
Eben Wood	2660	2875.85	Rhode Island
Pine Top Poultry Farm	2596	2820.10	Storrs
Floyd H. Moore	2646	2754.05	Pennsylvania
Kauder's Pedigreed Hampshires	2552	2752.80	Georgia
Triple Pine-Tested Quality	2713	2744.25	Western New York
Fuzzydele Farms	2553	2737.05	Pennsylvania
Hank's Hennery	2589	2681.60	Storrs
Broad Acres Farm	2636	2679.85	Storrs
Schwegler's Hatchery	2642	2657.80	Western New York
Hubbard Farms	2513	2639.10	Storrs
Hubbard Farms	2592	2637.35	Pennsylvania
Ned C. Willoughby	2583	2627.05	Georgia

Twenty Highest Barred Plymouth Rock Pens in Country to August 1

Owner	Eggs	Points	Test
Norman W. Amidon	3134	3246.55	Pennsylvania
R. C. Cobb	3096	3210.30	Storrs
Dryden Poultry Breeding Farm	2906	2943.55	Storrs
Riley Poultry Farm	2950	2923.90	Texas
J. W. Schaible	2871	2867.55	Hunterdon, N. J.
P. N. Hibbard	2729	2796.60	Storrs
R. C. E. Wallace	2696	2724.40	Florida
Stuart W. Smith	2659	2706.35	Storrs
Fuzzydele Farms	2645	2700.25	Storrs
Booth Farms and Hatchery	2557	2683.30	Oklahoma
Riley Poultry Farm	2579	2679.55	Michigan
Broad Acres Farm	2674	2677.60	Storrs
Booth Farms and Hatchery	2543	2653.75	Florida
Booth Farms and Hatchery	2447	2610.75	Missouri
Schwegler's Hatchery	2556	2602.60	Central New York
Foster Jameson	2461	2583.90	Maine
E. B. Parmenter	2469	2581.15	Pennsylvania
R. R. Parks	2545	2562.45	Pennsylvania
David T. Cohen	2448	2537.35	Michigan
Riley Poultry Farm	2475	2530.35	Georgia

Twenty Highest White Plymouth Rock Pens in Country to August 1

Owner	Eggs	Points	Test
Riley Poultry Farm	2768	2877.40	Oklahoma
Homestead Farm	2820	2681.50	Pennsylvania
John Spangenberg	2552	2638.55	Storrs
Kalerok Farm	2438	2614.90	Rhode Island
Riley Poultry Farm	2608	2608.95	Storrs
E. A. Hirt	2461	2588.50	Storrs
Booth Farms and Hatchery	2410	2587.10	Missouri
Four Winds Farm	2542	2563.15	Michigan
Booth Farms and Hatchery	2506	2549.10	Texas
Townsley Trapnest Farm	2453	2540.10	Georgia
F. L. Woodworth	2388	2538.90	Michigan
John Spangenberg	2427	2522.20	Maine
Belcarihill Farms	2493	2511.15	Storrs
Riley Poultry Farm	2618	2473.55	Georgia
Drumm Egg Farm	2368	2445.45	Georgia
Belcarihill Farms	2381	2409.70	Pennsylvania
E. A. Hirt	2270	2402.00	Rhode Island
Philip S. Davis	2305	2400.45	Central New York
Clyde Cochran	2364	2390.45	Oklahoma
Earl Dunham	2268	2371.30	Storrs

Average Production in Each Test to August 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for July	Per Cent Mortality to Aug. 1
Storrs	1,300	190.15	197.90	24.96	3.00	13.61
Texas	1,456	181.74	186.62	24.62	2.26	18.06
Pennsylvania	1,066	180.41	184.96	24.60	1.50	18.10
Passaic, N. J.	1,144	178.38	184.20	24.76	1.92	15.38
Georgia	1,352	178.86	182.80	24.50	1.77	18.56
Oklahoma	650	177.30	182.64	24.72	1.07	15.33
Hunterdon, N. J.	650	173.68	179.83	24.86	3.38	16.30
Michigan	741	172.05	177.96	24.81	2.15	17.54
Florida	1,248	173.57	176.70	24.43	2.00	16.66
Central New York	910	161.99	169.33	25.08	2.30	14.83
Western New York	884	164.67	168.59	24.88	1.80	12.10
Rhode Island	650	159.98	168.42	25.24	2.00	19.38
Arizona	390	167.57	167.46	23.97	4.87	20.25
New York State	1,092	162.37	166.96	24.67	1.92	13.46
Missouri	780	150.12	160.70	25.68	2.30	20.38
Maine	1,027	155.70	158.52	24.40	2.33	18.40
All Tests	15,340	171.96	177.41	24.74	2.19	16.59

High Pen, Each Breed, in Illinois Non-Standard Test to August 1

Owner	Breed	Eggs	Points
E. T. Herstein	White Leghorn	1861	1914.75
Mapleside Poultry Farm	Barred Rock	1927	1904.85
F. S. Tarbill	Rhode Island Red	1644	1684.90
Berry Ajax Hatchery	Black Australorp	1607	1668.70
Belldear Hatchery	White Wyandotte	1582	1638.30
John Pfeifer	New Hampshire	1349	1471.85
Illinois Hatchery	White Rock	1397	1451.30
Wallace Moody	Buff Rock	1006	1034.35

Five High Pens, R.O.P. Progeny Test, Paterson, N. J., to August 1

Owner	Breed	Eggs	Points
J. J. Warren	Rhode Island Red	3380	3463
E. B. Parmenter	Rhode Island Red	3318	3422
W. B. Coles	White Leghorn	3126	3176
Crooks Farm	Rhode Island Red	2967	3083
Dembro Poultry Farm	White Leghorn	2860	3033

High Pen, Each Breed, in Vineland, N. J., Hen Test to August 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	1958	2117	Two-Year
E. B. Parmenter	Rhode Island Red	1787	1928	Two-Year
Schwegler's Hatchery	Barred Rock	1653	1771	Two-Year
Albert Lawton	White Rock	1347	1456	Two-Year
Pine Top Poultry Farm	New Hampshire	846	924	Two-Year
Sebold Poultry Farm	White Leghorn	1451	1516	Three-Year
J. J Warren	Rhode Island Red	1104	1196	Three-Year
Nedlar Farm	New Hampshire	865	926	Three-Year
Treiber Poultry Farm	White Leghorn	1589	1707	Mixed Age
Schwegler's Hatchery	White Wyandotte	1536	1648	Mixed Age
Kerr Chickeries	Barred Rock	1476	1582	Mixed Age
Schwegler's Hatchery	White Rock	1331	1410	Mixed Age
Wene Chick Farms	New Hampshire	1219	1304	Mixed Age
Kerr Chickeries	Rhode Island Red	1087	1180	Mixed Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Creed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5746	6212	Two-Year
E. B. Parmenter	Rhode Island Red		5784	Two-Year
Schwegler's Hatchery	Barred Rock	4962	5210	Two-Year
Albert Lawton	White Rock	4340	4615	Two-Year
Pine Top Poultry Farm	New Hampshire	3623	3914	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	7358	7905	Three-Year
J. J. Warren	Rhode Island Red	7010	7554	Three-Year
Nedlar Farm	New Hampshire	5520	6032	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to August 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	2280	2487.30	Two-Year
E. B. Parmenter	Barred Rock	2124	2326.60	Two-Year
J. J. Warren	Rhode Island Red	1794	1953.95	Two-Year
Fuzzydele Farms	New Hampshire	1780	1948.65	Two-Year
Lindstrom Poultry Farm	White Wyandotte	1709	1863.70	Two-Year
Fuzzydele Farms	White Leghorn	1800	1968.65	Mixed Age

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	5859	6107.20	Two-Year
E. B. Parmenter	Barred Rock	5435	5849.75	Two-Year
J. J. Warren	Rhode Island Red	5315	5681.55	Two-Year
Fuzzydele Farms	New Hampshire	5035	5426.90	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4799	5145.35	Two-Year

Oats for Turkeys

Oats should be more widely recognized in America as turkey feed, P. H. Margolf, Pennsylvania State College, points out. Tests which he has conducted indicate that considerable savings can be made by allowing the growing birds to substitute whole oats for part of their ration of concentrated feeds.

In the experiments, all of the turkeys received starter mash for the first 9 weeks after hatching. Then developer mash was fed and when the birds were 15 weeks old scratch grain was added. When the poults were 4 weeks of age, half of the poults were given whole oats. All feeds were hopper-fed. About 275 birds were brooded in confinement. Of these, one-third continued in confinement until mature and the others were given range.

The whole oats consumed by the group receiving the oats and reared on range amounted to 41 per cent of their total feed intake. From 15 to 18 per cent less mash was consumed when whole oats were supplied. From these results, it appea that 1,200 pounds of mash may be replaced by 1,200 pounds of whole oats for every 100 turkeys raised o range, according to Margolf.

If some care is used in introducing the grain to the birds, whole oats may be substituted now for part of the feed of half-grown turkeys which have received the usual feeds up t this time. In order to avoid digestiv disturbances, it might be well t limit the amount of whole oats a lowed for a few days until the birds become accustomed to the change in their ration.

—Pennsylvania State College news releas

ALTHOUGH AMERICA is one of the best fed nations, more than 40 per cen of its people suffer from dietary deficiencies. Experts state that if all families ha sufficient purchasing power and knew what foods to buy, the consumption of butte would be increased 15 per cent, milk 20 per cent, eggs 35 per cent, tomatoes and citru fruits 70 per cent, and leafy, green and yellow vegetables 100 per cent, according to item in Colliers Weekly.

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NATIONAL POULTRY DIGEST

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Published by Everybodys Poultry Magazine
Publishing Co., Inc., Hanover, Pa.

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Schwegler's Hatchery	White Leghorn	5859	6107.20	Two-Year
E. B. Parmenter	Barred Rock	5435	5849.75	Two-Year
J. J. Warren	Rhode Island Red	5315	5681.55	Two-Year
Fuzzydele Farms	New Hampshire	5035	5426.90	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4799	5145.35	Two-Year

Oats for Turkeys

Oats should be more widely recognized in America as turkey feed, P. H. Margolf, Pennsylvania State College, points out. Tests which he has conducted indicate that considerable savings can be made by allowing the growing birds to substitute whole oats for part of their ration of concentrated feeds.

In the experiments, all of the turkeys received starter mash for the first 9 weeks after hatching. Then developer mash was fed and when the birds were 15 weeks old scratch grain was added. When the poults were 4 weeks of age, half of the poults were given whole oats. All feeds were hopper-fed. About 275 birds were brooded in confinement. Of these, one-third continued in confinement until mature and the others were given range.

The whole oats consumed by the group receiving the oats and reared on range amounted to 41 per cent of their total feed intake. From 15 to 18 per cent less mash was consumed when whole oats were su plied. From these results, it appea that 1,200 pounds of mash may be replaced by 1,200 pounds of whol oats for every 100 turkeys raised o range, according to Margolf.

If some care is used in introducin the grain to the birds, whole oats may be substituted now for part of the feed of half-grown turkeys which have received the usual feeds up t this time. In order to avoid digestiv disturbances, it might be well t limit the amount of whole oats a lowed for a few days until the birds become accustomed to the change in their ration.

Pennsylvania State College news relea

ALTHOUGH AMERICA is one of the best fed nations, more than 40 per cen of its people suffer from dietary deficiencies. Experts state that if all families ha sufficient purchasing power and knew what foods to buy, the consumption of butte would be increased 15 per cent, milk 20 per cent, eggs 35 per cent, tomatoes and citru fruits 70 per cent, and leafy, green and yellow vegetables 100 per cent, according to item in Colliers Weekly.

NATIONAL
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NATIONAL

POULTRY DIGEST

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Vol. 2, No. 22 October 15, 1940

What the Poultry Industry of this Country Needs

By W. D. TERMOHLEN

Surplus Marketing Administration, Washington, D. C.

Condensed from a Talk

IF we were to go through the various strata of our industry and the population it serves, asking what the poultry industry needs, we would have answers galore. The variations in answers would depend on the place of the individual as an industry member or consumer, upon his pet peeves or idiosyncrasies, upon his acquaintance with and understanding of other branches of the industry, and his knowledge of the fundamentals of economics.

In times such as we are facing today we must look at this question of the industry's needs in a broader way, not as individuals but as a group of fellow men working together. It seems to me it is not a question of what is wanted or desired, but of what is useful, necessary and essential, and it is from this angle that I wish to consider the subject.

Study Economic Problems

Perhaps, because of my economics training, some of my views will clash head-on with much of the popular industry thinking of today. One of the greatest present needs of the industry is, in my opinion, more intelligent attention to its economic

Presented at NEPPCO Exposition, Atlantic City, N. J., October 2, 1940 aspects—at least equally as much as given to the production aspects. Productive effort is but a means to an end – consumption. In spite of the fact that production is meaningless without consumption, the people of the poultry industry have concentrated their attention largely on the means (production) and have just as consistently ignored the end (consumption).

It is my firm conviction that much of our industry difficulty and chaos is explainable in this persistent attention to but one phase of economic phenomena. In recent years the productive process has become more complex and interrelated and, consequently, it has become increasingly important that we get a better insight into the nature of consumption. Today a definite need of the industry is to know more about the consumer and his function. The industry must find ways and means of obtaining a vast array of basic facts relative to the consumer and the distribution of the industry's products if it is to go forward in the 40's.

What the National Board Can Do

In this respect, there is optimism on the horizon in the recent formation of the National Poultry and Egg Board organized with the objective of increasing the use of poultry, eggs and their products, through a better understanding of their value and to initiate and encourage education and research to this end. The carrying out of this program of consumer education will, I believe, not only educate consumers, but will result in a real enlightenment of the members of the industry.

There must be forthcoming from every branch of the poultry industry a constant moral and financial backing to this new organization if the goal of its permanent program is to be reached and consistently maintained from year to year.

In plain simple English, how far and how long the program will go is entirely up to each and every member of each and every branch of the industry. In this respect, patience is a definite need. Do not expect quick, sensational and impossible results. For a few years to come, it is my guess that much will be accomplished if the consumption rate of the industry's products is maintained at or near present levels. Trade barriers, and profitable production and marketing have pointed toward the need of uniformity throughout the country in grades of poultry and eggs.

It will not be at all surprising if the consumer educational program brings out this need directly to the industry and results in a sound program cooperated in by the industry and the State and Federal Governments. The program of The National Poultry and Egg Board has been a crying need of the industry.

A step has been made on the road of progress. The industry, having learned through the Seventh World's Poultry Congress the advantage of working together shoulder to shoulder in a common objective, will meet this need of consumer education and go on to success.

Getting Into Action

The National Poultry and Egg Board affords an opportunity for marvelous performance. You cannot expect the Executive Committee or Homer Huntington, the manager, to immediately come out with a cut and dried formula for success. Consumer education on a national scale is a new effort and there must of necessity be a certain amount of trial and experimentation. When dealing with human beings, you do not have set scientific patterns to follow. There is constant change.

Some people of the industry want an exact blue print before they will become interested. If we had waited until we had a final blue print before initiating activity for the Seventh World's Poultry Congress, we never would have had such a Congress. We found it necessary to make certain changes and to incorporate new things even while the Congress was being held.

We have had enough speculating and planning during the past year to sight the direction we want to drive this thing called consumer education. What we need now is to give it a good wallop with the hammer of active support. The poultry industry needs action. We have had altogether too much inaction during the past several years.

Preparing for the Uncertain Future

We are now, or soon will be, increasingly affected by economic impacts resulting from this upset world. Tomorrow there will be new economic implications – many of which we cannot at present clearly foresee or predict with any degree of accuracy. The poultry industry needs to be ready and prepared. The poultry industry needs to be so organized as to be able to meet without flinching any job, no matter the size or severity, which any emergency might call for, meet it with action and without waste of time or confusion.

One way to meet the systematic organization practiced in actual and economic warfare by the totalitarian groups, is to be prepared with even better organization. The poultry industry needs to break and cast off the straight jacket of branch or segment isolation. We need more and more of all-industry groups working together.

Bring Poultry Groups Together

While we do have many poultry organizations, some 500 in number of national, regional, state and local, the industry is, if we look at it honestly, a disorganized mob. Numerous as these organizations are, there is no cohesion. There is no strong industry voice. The industry needs quickly to reach the place where it is recognized that the welfare of each individual making it up is the interest as well as the responsibility of all.

We need to quit saying that ours is a difficult industry because of so many small units spread all over the country, which makes it impossible to solve problems by group action. Such facts merely are a challenge which should urge everyone on even more energetically. Poultry has been a submerged industry because of lack of working together and because too few industry people have been willing to assume the responsibility of leadership. There is existing in the poultry industry a wealth of potential leadership. The poultry industry needs more people willing to give some of their time to the upbuilding of the industry of which they are a part. On the satisfaction of this need for more leaders depends the future success of the industry.

Solving All-Industry Problems

There should be a strengthening and expanding of the National Poultry Producers Federation to assure a common meeting ground for the protection and solution of the interests and problems of producers. There has been too little friendly, constructive cooperation and entirely too much friction among the producer groups. A definite need seems to be the realization that the interests of producer groups are identical and they succeed or they fail together. Failure or weakness on the part of any one producer group immediately and inevitably injures the others. The National Poultry Producers Federation, properly supported and actively functioning, can correct this situation.

There is, however, a need which I doubt the industry's present ability to meet. That is the responsibility as an important part of the nation's agriculture to prepare for and meet the possible variety of serious economic results growing out of this World War No. 2.

The poultry industry needs to be ready to quickly identify, classify and recognize changes in the world which may bring ill effects. It needs to pick the most able people of the industry and cloak them with adequate authority to act promptly and intelligently in meeting any new economic forces arising out of this war. Vital to meeting this need is a greater appreciation and understanding by persons in all branches of the industry of the significance and working of economic forces. This is essential to prevent any form of economic pincers being employed against the industry.

In preparation to meet this need, we require organization. As I visualize such organization it must not be an overhead one, without proper foundation. It must be one which will develop and encourage leadership. It must be democratic and representative of all branches of the industry. It must permit full discussion and the obtaining of a complete picture of industry opinion.

How to Get Organized

First. The National Poultry Producers Federation should issue a call for a meeting at an early date at some central point of their representatives and, in addition, representatives of national and regional marketing groups, poultry press, feed manufacturers, equipment manufacturers and any other groups which should properly be representative of the industry. An effort should be made to have a representative from at least one organization of each state.

Second. At this meeting there should be discussed and developed ways and means of setting up, in each State, what might be termed a State Poultry Industry Council. As the result of the Seventh World's Poultry Congress, there already exist some state groups which can automatically assume this function. These state groups should be representative of all segments of the industry of each state. Representatives of the poultry husbandry and agricultural economics departments of the state colleges and state departments of agriculture should be included in an advisory capacity.

After the state groups are created, there should be set up seven regional groupings, perhaps as follows: Northeastern, Southeastern, East North Central, West North Central, West South Central, Mountain, and Pacific Coast, composing regional poultry industry councils. These regional councils should be composed of one or more elected delegates from each of the states. The regional groups should then select at least one representative to sit on a national council along with representatives from the existing national poultry organizations.

Within each of the states it might even prove advisable and highly desirable to have county committees or councils. Thus will be created an organization prepared to give consideration to problems which may arise and to reach recommendations on proposals and be ready for action to carry out plans developed. If the special occasion does arise, which we, of course, earnestly pray will not, the poultry industry will be prepared to meet new economic forces set in motion by the totalitarian governments.

Other Important Needs

At present, the poultry industry has the need of a flexible program which will make it possible to bring a balance between production on the one hand and population growth and urban purchasing power on the other, and thus stabilize price levels and compensate for the vagaries of the economic cycles. This need will probably be even more evident when the war is over. There is a need for thinking through the proper relationships between the various branches of the industry.

The industry needs to be assured of representation and consideration in national and state programs relating to agriculture. There is a definite need for more research into the economic aspects of the industry. There must be continued encouragement of greater efficiency in production and marketing methods.

New uses for the products of the industry must be discovered. Transportation and traffic problems need their share of attention. Cooperation with and backing wholeheartedly the consumer educational program of the National Poultry and Egg Board is an immediate need. The question of trade barriers is in need of attention. The adoption of uniform standards and grades for the products of the industry is a vital need if eggs and poultry are to maintain their place on the consumer's table. The industry needs to talk and talk about problems such as these, for in a democracy it is the only way to get anywhere and an organization such as suggested is the one way to make this work. Such an organization would certainly enable the industry to face this uncertain period ahead with more ease of mind and with confidence in their hearts.

House Pullets on Basis of Maturity

The mere fact that 300 pullets of the same age are on the range is no proof they should all be housed at the same time. Even if conditions are such that they must all be brought in, it certainly is a mistake to house them all as one flock in one laying house room.

The reason why it is a mistake is that all pullets of the same age are not uniform in physical or sexual development. At least two rooms should be used in the segregation of pullets according to their abilities to meet competition. Those not qualifying in size or maturity should be left on range until they show signs of bloom or be given a third room until the best ones can be liberated with the two major lots. There will likely be a few that should never be housed. All the apples on a tree are not first-class fruit and some rejects must be rejected as a part of any business.

—H. E. Cosby, The Eggsaminer, September, 1940.

Estimated 1940 Chicken Population

Condensed from U. S. D. A. Poultry and Egg Production Report

THE number of chickens raised on farms in 1940 is estimated at 680,149,000 birds compared with 772,896,000 last year and a 10-year (1929-38) average of 721,145,000 birds.

The 12 per cent reduction from 1939 in number of chickens raised reflects the influence of an unfavorable season. Feed-egg and feed-chicken price ratios continued unfavorable to producers from last November up to the close of the main hatching season in June. The usual 3-year cycle of chicken production has been true to form, showing in 1938 and 1939 the customary 2 years of increase leading to heavy supplies and low prices of eggs and chickens, and a third year of sharp decrease.

Smaller Marketings Expected

Reduced numbers of chickens raised this year are now being reflected in smaller marketings of young chickens than last year, and will result in fewer layers and a smaller production of eggs through the season immediately ahead. The improved situation, resulting from lessened supplies and more favorable relation of the prices of poultry products to feed costs, will probably lead to heavy hatchery production of chicks for broilers during the fall and winter. The situation also sets the stage for an increase in the number of chickens raised next year in harmony with the customary trend for a recovery in numbers in the year following the cylic year of decrease.

Numbers raised this year are about 6 per cent below the 10-year average but are about 5 per cent above the 1937 number of 648,266,000 which was the low point of the series from 1922 to date. The farms of the North Central States will raise this year about 327 million chickens, or 48 per cent of the United States total. The Southern States will raise 224 million or 33 per cent, the North Atlantic States 77 million or 11 per cent, and the Rocky Mountain and Pacific Coast States about 52 million or 8 per cent.

Decreases in All States

Decreases below last year's numbers occurred in all States. The decrease is about 15 per cent in the North Atlantic, South Central and Western States, about 13 per cent in the South Atlantic States and about 9 per cent in the North Central States.

U. S. D. A. Agricultural Marketing Service, Washington, D. C.

Possible Effect of World Conditions on the Poultry Industry

By O. A. HANKE

Condensed from a Talk

PROPERLY to analyze this subject, "Possible Effect of World Conditions on the Poultry Industry," we must look first of all at the poultry industry itself in the various parts of the world to see what changes have occurred, what population readjustments will do to the export and import situation, and how the balance, which has existed for so many years, may be upset. Then there's the larger picture of non-agricultural economic conditions and their effect on agriculture, in general, and poultry, in particular.

Most of us know, I guess, that we produce about 3 billion dozen eggs a year in this country. I had heard that Denmark exported a lot of eggs to England and that the Netherlands did, too, and I've known for quite awhile that there are some good poultry scientists in Germany, but I'm wondering if you, like I, had little more information than that. Our most familiar problem in the past has been Chinese imports, and, you remember, we have excise taxes in an effort to control that situation and protect the United States poultry industry.

L. A. Wheeler, chief, Foreign Agricultural Service, U. S. D. A., pointed out in a paper presented at the Seventh World's Poultry Congrses that the principal exporters of eggs in the shell are Denmark and the Netherlands. China dominates world export trade in egg products. Hungary, Irish Free State and Bulgary are the leading exporters in recent years of dressed poultry. Principal importers of dressed poultry have been the United Kingdom, Germany, and Switzerland.

In summarizing the situation, Wheeler said, "The total value of United States foreign trade in eggs and poultry is less than 1 per cent of the total cash income derived by American producers of eggs and poultry. Although imports of egg products from China are important, it is of interest to note that even at their peak, they never comprise more than 2 per cent of the total egg consumption of the United States.

"United States exports of dressed poultry, mostly to Panama and the United Kingdom, average only 2,000,000 pounds annually. Imports of dressed poultry into the United States are of even smaller volume.

"Canada is the only country with which the United States has concluded a trade agreement in which poultry and eggs are significantly involved. Import duties were reduced by both countries in this agreement for the purpose of substantially increasing the interchange between these two countries . . . It is doubtful whether these changes will increase United States trade with Canada by more than negligible amounts when compared with total production. The poultry industry, as in the past, will have to rely mostly on home markets. The real significance of the trade agreements program to the American poultry producer, therefore, lies in its effect on general economic conditions and the level of consumption in the United States."

That was Wheeler's summary of the situation a little more than a year ago, before the second World War broke out. Danish and Dutch eggs were going to England then. Using our annual production of 3 billion dozens as a basis for comparison, Denmark was producing annually about 5.4 per cent as many eggs, Germany 17 per cent as many, Great Britain and North Ireland 8.7 per cent as many, Netherlands 5.3 per cent as many, and Belgium about 4 per cent as many. China's total production was about two-thirds as much as ours.

Before the war, the United Kingdom and Germany accounted for more than two-thirds of the world's imports of eggs. England was importing approximately twice as many as Germany.

Today, England looks to Canada for the supplies she must import.

Today, European commerce is controlled by Germany.

News from Abroad

When we look at that part of Europe controlled by Germany, we read reports like the following:

The Netherlands – "A shortage of feed will force farmers in the Netherlands to kill 12,000,000 hens and about two-thirds of the Netherlands stock on or before September 15."

Belgium—"The Nazis have decreed the slaughter of 50 per cent of the livestock and some 90 per cent of the poultry. This was because Belgium normally imported some 55,000 tons of wheat from the United States and Canada and can now get no more. Furthermore, the country had stored up no wheat reserves."

Czecho-Slovakia – "The Germans have requisitioned all fats, butter, eggs, bacon, milk and most of the fodder."

Poland—"The Germans marched through Ptak's Farm, September 2, 1939, the second day of the war. Before another week was up, the Germans had killed off all the chickens and pigs for food and had appropriated all the things his wife had stored in the cellar."

Norway—"To the 85,000,000 Germans of whom Herr Hitler so consistently boasts, the acquisition of Norwegian supplies, meant for a population of less than 3,000,000, can be only a drop in the bucket—to Norwegians it is a matter of life and death."

Spain – "There is some indication that

Talk presented at the NEPPCO Exposition, Atlantic City, N. J., October 2, 1940 this year's Spanish harvest will improve eating conditions somewhat, although there will still be the problem of how to get the food around, once it is produced. An average family in Madrid is now lucky to get meat once a month. An egg can be bought perhaps once a month . . . The prices of foodstuffs are fixed, but there has simultaneously grown up a lucrative system of food bootlegging—those who can pay the price (and they are not the workers) can always manage to get good food."

Hungary – "One of the certainties is that Hitler is not likely to accept any less food from Hungary than he has been getting, bad crops or good."

France—"Germany has asked for 58 per cent of the horses, mules and cattle in the unoccupied portion of France, to say nothing of what has been requisitioned in the occupied portion, indicating a tremendous drain upon the agriculture there."

Denmark—"All butter and bacon shipments (Britain formerly took 98 per cent of the bacon and 75 per cent of the butter and eggs) were switched to the Third Reich."

These are reliable news reports from Europe furnished by the principal press associations. On Denmark's condition, however, I have additional personal information received in a letter dated August 7, 1940, from a good friend of mine in the Danish government's poultry staff. I shall quote from his letter.

"My work is getting along slowly. All meetings were called off when they (the Germans) came. Public meetings are simply forbidden. We have a hard time getting feed for the poultry farmers, as all imports have stopped. The market for the eggs also had to be changed. We usually sold eggs to England for about $20,000,000 a year. And just overnight that market was closed.

"We are taking care of the breeding centers so they get feed enough to carry the best of the stock along. Some of the large poultry farms that are not doing real breeding work (under official supervision) will probably have to close. Most of our eggs, however, are produced on general farms and they will be able to get along for awhile yet. We don't know how the harvest will be. It doesn't look too good, but we hope the best."

That completes our swing around Continental Europe. No one can forecast what the poultry population in Hitler's Europe is now or will be a year hence.

Flock Reductions in England

Probably we know most about what is happening in the British Isles. We learn from the poultry magazines there that the numbers of poultry have been reduced greatly with some discussion now of an eventual decline to one-third of the number of chickens before the war. Considerable difficulty is had in feeding even those which are left, for grain is difficult to obtain and great emphasis is being laid upon the feeding of table scraps which, in some instances, may make up one-half or more of the ration.

Plans have been made to preserve a small number from outstanding strains for the future rebuilding of flocks. Domestic egg prices in Great Britain in late August were about 48 cents a dozen compared with 36 cents a year earlier, which is an increase of about one-third. These higher prices have reduced egg consumption drastically in England.

Undoubtedly, it will take years to restore the English poultry population when the war ends, regardless of who wins the war. U. S. breeders may be called upon to help supply the foundation stock then.

While the war continues, there is always a possibility of imports to England, possibly through Canada, but it appears that this possibility is fast turning into an improbability. Just recently there reached my desk a U. S. D. A. release captioned, "Canada May Have Hog and Poultry Surplus." Canada has been sending large supplies of eggs to the United Kingdom since continental supplies were cut off. It is estimated these supplies will reach 350,000 or 400,000 cases (30 dozen to the case) in 1940, but that 500,000 cases could have been shipped without danger to domestic supplies.

Until peace comes in Asia, Chinese exports (imports to us) probably will not be a severe challenge.

No Export Demand for 1941

So you see, in making our plans for 1941 (and possibly 1942) for all practical purposes, we can forget any influence of an export demand for these reasons:

If Hitler should win and dominate Europe, it's not likely that any egg export business will develop.

If England should win and dominate, or if the great war should result in a compromise, which I consider improbable, the British Empire undoubtedly will be able to handle England's needs.

Everything points to a great scarcity of food in Europe in the next year, almost regardless of what direction the war may take, but it is doubtful if exports from the U. S. will increase immediately for it appears to be against the present policy of the government to supply food to Europe, because of the difficulties of getting it through the blockade and the further desire to avoid giving aid to Germany. Eventually, of course, it is probable that food will be exported to Europe from this country, but even then it is doubtful whether any particular quantity of poultry and eggs will be included.

We might speculate on what would happen if Japan should conquer China, and Chinese produced eggs should be exported in even larger quantities.

We might consider the possibility of having a self-contained Western Hemisphere in which there would have to be free trade, relatively speaking, between North and South America. Production has been increasing rapidly in South America—

due to some fine breeding stock which has been imported from North America. Production has already reached the self-sufficiency basis there.

U. S. Conditions Most Important

But from a practical standpoint it seems best to devote the remainder of this presentation to the relation of United States economic conditions to our poultry industry. Colonel Leonard P. Ayres, noted economist, forecasts that the defense preparation program of this country will stimulate industrial production for the next two years. Although the implements of war are in no sense income-producing, they will temporarily operate to lift the national income.

It is a rather fundamental fact that egg prices and purchasing power of eggs depends largely on the prosperity of city people in the United States, and upon the prices of competitive protein products. Now, one of the best indicators of urban prosperity is the amount of building being done. At the present time, the building cycle is definitely on the upgrade and it, as well as other heavy industries, appears headed for further increases within the next year or two. Meat prices also are showing trends to higher levels.

Economists are predicting a high level of industrial production. The fact that payrolls are increasing faster than employment means higher average earnings per worker. It should be favorable to an increase in demand for eggs and poultry.

It, therefore, appears likely that we shall have a relatively strong demand for poultry and eggs in the next year or two.

On the other hand, because of smaller hatchings last spring, leading to fewer pullets this fall, production is likely to be slightly lower in the coming months than in the previous year or two.

Guard Against Overproduction

There is a great possibility, then, that we will have a combination of strong demand and smaller production which should create a favorable price situation in the coming months. Because poultry production can be increased with relative rapidity, however, an increase in production is likely to take place next year and so prevent any disproportionate rise in poultry and egg prices. In fact, any marked increase during the next year or two might be disastrous, as I shall mention again later.

When we attempt to look farther ahead than the next year or so, predictions become little better than guesses, and about all we can do is call attention to some possible developments.

In the first place, I think we all will realize that a prosperity based on armament manufacture must come to an end sooner or later. Such production does not add to the wealth of the country, but consists in the manufacture of products which are entirely useless in peace time as far as serving any constructive purpose is concerned, and are used only for further destruction in time of war. Therefore, there must come a time, whether this country becomes involved in war or not, when the stimulation provided by the manufacture of armaments ends. When that time comes, unless there are other industries to employ the workers (which cannot now be foreseen) it is almost a positive conclusion that we must go through another difficult period of readjustment, such as that which followed World War No. 1.

For that reason, it does not seem to us that it would be the part of wisdom to make large increases in buildings, equipment, and other facilities based purely on whatever improvement in markets we may have in the next year or two.

This is not an encouraging point at which to close. All our conclusions, of necessity, are based on disturbed world conditions. Spending money for local defense is not a permanent solution of our economic problems.

Production Less Than Consumption

Since 1923, production of food in this country has been less than consumption, and increasing net food imports have prevailed. During 1936, net imports amounted to about 5 per cent of production. These are facts presented by the economist at Cornell University. They say further, "Barring war, there is little likelihood that the United States will, for any extended period of time, export food in sufficient volume to exceed food imports substantially."

May I read you briefly the resume of their forecast:

"With an expansion in population, it will be necessary to import more foods not produced in the United States. It will also be necessary to increase imports of foods now produced in the United States unless production of our home produced foods expands. Such expansion could take place by cultivation of poorer lands, although the recent tendency has been to abandon them; by the more extensive use of good lands; by an increase in food grains at the expense of feed grains; by the expansion of the production of fruits and vegetables; by the expansion of dairy and poultry production relative to meats; or by any combination of these methods."

Summarizing, then, our conclusions naturally divide themselves into two parts, the short term outlook and the long term outlook.

Considering the short term outlook, it's obvious that Europe will have need for food imports; however, it is unlikely that there will be any appreciable demand for eggs from the United States. We are, therefore, not justified, at the present time, in looking forward and planning for an increased supply in this country. Further, on the short term basis, we must conclude that poultry and egg prices will be determined largely by our own domestic prosperity, in both urban and agricultural sections.

Taking the long term outlook. It's quite probable that there will be a gradual shift to heavier consumption of eggs and poultry, in comparison with the heavier meats. This has been the trend in Europe as those countries have reached economic adolescence or maturity. The same thing likely is to happen in this country. However, if and when such a situation develops, it will be relatively easy in our highly mechanized poultry industry to expand production rapidly enough to keep pace with consumer demand.

It is hoped, too, that the consumer education program now definitely in charge of the National Poultry and Egg Board will contribute toward a stabilized consumption of all poultry products in this country. How fortunate we are to have this board to look to for leadership as we face the uncertain future!

Late Housing Induces Molting

Every fall one hears of pullets molting and going out of production soon after being housed. One of the common causes of this difficulty is late housing.

No matter how comfortable the hen house may be, the shift from range conditions to henhouse quarters is different enough that most pullet flocks are for a time restless and homesick for the range. Should this let-down in spirits come after the birds have started laying, the chances are that they will go on a "pout" and quit laying. One had better house them early and get them house broken before laying starts.

—H. H. Alp, Prairie Farmer, October 5, 1940.

A RECIPE which has gained favor with patrons of a chain of west coast restaurants is one for Turkey Derby, as follows: Flake white meat of turkey and saute it in butter. Add pure cream and flavor with sherry wine. Add the yolks of two eggs to thicken. Serve in a bread crouton and garnish with cranberry jelly.

—Dorothy Curtin, Turkey Talk, August, 1940.

Turkey Crop Slightly Larger

A record-breaking turkey crop for 1940 is indicated by farm holdings on September 1, says a U. S. D. A. news release. An increase from 32,732,000 birds in 1939 to 33,138,000 in 1940 puts this year's production 1 per cent over that of 1939 and more than 10,000,000 birds over the 1932-36 average of 23,081,000. Some of this year's supply is made up of heavy toms and hens held over from last winter because of low prices prevailing since December, 1939.

Hatchery production of poults decreased by 16 per cent in 1940, but home hatching increased enough to compensate for the drop in commercially-hatched poults.

Growers expect to market their turkeys much earlier this year than last, with October marketings indicated as being about 12 per cent of the season's total. November sales are expected to run about 45 per cent of the total production, as compared to 39 per cent last year. Weights of both toms and hens are expected to increase slightly this year, with hens averaging 12.0 pounds, one-tenth pound over last year's average, and toms increasing two-tenth of a pound to run about 18.1 pounds.

Cold storage holdings on September 1 were reported as 21,116,000 pounds, compared to 9,994,000 pounds a year ago. The holdings are almost entirely heavy toms.

Table 1—Indicated Number of Turkeys Raised in 1940, by Regions, Compared with Numbers in Past Years.

Geographic Divisions	Number raised				Number on hand Sept. 1, 1940 % of 1939	Indicated number raised in 1940
	Average 1932-36	1937	1938	1939		
	Thousands				Per cent	Thousands
North Atlantic	1,222	1,539	1,661	2,072	98	2,041
East North Central	2,005	2,450	2,692	3,370	111	3,743
West North Central	6,480	6,975	7,829	10,225	104	10,622
South Atlantic	2,090	2,249	2,166	2,548	103	2,624
South Central	6,123	6,315	5,869	6,670	94	6,299
Western	5,161	6,099	6,062	7,847	99	7,809
United States	23,081	25,627	26,279	32,732	101.2	33,138

Table 2—Proportion of Turkey Crop Marketed in Different Months (Reporter's averages)

Geographic Divisions	1940 Crop (intended)				1939 Crop			
	Oct. or earlier	Nov.	Dec.	Jan. or later	Oct. or earlier	Nov.	Dec.	Jan. or later
	Per cent							
North Atlantic	9.0	43.5	35.3	12.2	7.0	38.7	36.6	17.7
East North Central	9.6	51.1	33.8	5.5	7.0	47.0	35.6	10.4
West North Central	17.5	46.5	28.7	7.3	14.4	40.9	33.7	11.0
South Atlantic	13.8	41.6	35.8	8.8	13.9	37.1	34.6	14.4
South Central	4.9	52.0	36.4	6.7	4.1	43.3	40.9	11.7
Western	11.1	36.3	32.0	20.6	9.0	28.8	35.8	26.4
United States	11.7	45.1	32.6	10.6	9.7	38.8	36.1	15.4

Views on Egg Market Problems

By C. L. POOLE
New York Commission Merchant

Transcript of a Talk

MY assignment is not a difficult one to discuss, as I have spent 40 years in the industry, 36 of which have been exclusively in the commission business. I have, therefore, seen many changes throughout the trade, some good and some bad. I think that the greatest strides have been made through quality improvement and standardization.

In the early days, eggs were shipped from the Midwest to the eastern consuming markets in standard 30-dozen cases, using the old straw-board flats which caused unlimited concealed damage and tied up a great deal of the receiver's money in claims. When western eggs first came to New York, they were uncandled and only graded during the storage packed season. The shipper himself did not know whether his quality was good or bad, and had to depend upon his agent to protect his interests. In those days, it required a real expert judge of egg values to be a successful buyer or seller. Later it became mandatory to candle eggs for interstate shipments. This was really the starting point of intelligent egg grades, which have been improving constantly since.

Some of the other changes which I think have worked to a disadvantage and have served to curtail egg consumption are as follows:

I feel that the development of scientific egg production rapidly approaching the year 'round supply of fresh eggs, limits the period for the sale of storage eggs which were purchased during the flush of production at consumer prices, and not at surplus prices. This limited period for the sale of storage eggs has a depressing effect on all markets.

Some Laws Harmful

The egg laws in the various consuming states are creating barriers against other states and thus obstructing the free movement of eggs in certain consumptive channels. I also feel that the compulsory selling of eggs on grade is a deterrent to egg consumption particularly since the specifications for Grade A and higher grades are so rigid that they create a wide range in prices between Grade A and Grade B. Such discrepancy in prices is bound to create skepticism on the part of the housewife as to the quality of Grade B. This has a tendency to depress markets and keep egg prices on a lower level than would be if we had no egg laws. Competition will take care of quality.

The premium practice is without doubt a great fallacy, for in egg marketing there is truly no such thing as a premium. Today buyers are competent and expert judges of values, and with keen competition, they could ill afford to pay more than actual value. When the buyer pays more than the quoted market for eggs, it is because the producer or the shipper has put more value in the case than the specific grade requires so that he is not paying a premium, but an added price for a better product.

Effects of Future Trading

I believe that successful merchandising of eggs has been jeopardized to a vast extent by future trading. This practice has grown in leaps and bounds and has done more to destroy the merchandising branch of our industry than any other single factor.

The shipping of eggs to consuming markets on a net basis deprives the producer or the shipper of the true knowledge of the value of his merchandise, and opens the door for chiselling operators to destroy merchandising profits.

All these problems are a part of the new methods of trading which have brought the industry to a demoralized state of affairs, because they are fundamentally wrong. When an industry finds itself in a position where no one finds it profitable, where the producer has to have government subsidy or price pegging, and where the receivers are compelled to retrench on all overhead in an effort to make ends meet, there is something wrong with the industry.

Improving the Situation

It is an easy matter to pick flaws or to criticize and condemn, and those who criticize should have some constructive suggestions for improvements.

My suggestions may not be a panacea for all the trade problems, but if adopted, would instantly correct the most flagrant trade abuses.

I am referring to the universal adoption of the commission business, the placing of all receivers of butter and eggs under a federal license and bond.

To my mind, the commission method of marketing dairy and poultry products is the fairest and most ethical sales medium. It will serve to stabilize markets and curb manipulations. It will keep markets at all times at the highest possible level at which merchandise will flow freely into consumptive channels.

Presented at University of Maryland Poultry Products Grading and Marketing School, College Park, Md., Sept. 12, 1940

It will have a tendency to draw back a large volume of trade which the consuming markets have lost through direct purchases, and with this increased demand through the local channels, we will have a healthier, firmer, and more active market.

I believe that fully 60 per cent of the total receipts in New York pass through direct channels and never participate in establishing markets. With all merchandise arriving on a consignment basis, the law of supply and demand will always rule. It will create free and unrestricted markets with the power to control prices on a fair and honest level of value, which even the Future Board would no longer control. Spot prices would be the dominating factor, which is as it should be. There would be no monkeying with prices — even our government would be unable to peg prices unless it bought everything.

Advantages for Producers

The producer or the shipper would have first hand knowledge of the sale of his product. He would know exactly what it grades or scores and on what basis it was sold, thus eliminating his present day ignorance of his products actual selling price. He would know exactly what it cost him to have his merchandise sold. He would know that all transactions must be on the level, as any deviation from honest business practices would result in a revocation of the receiver's license. He would own and control his product until it was actually sold.

The commission form of business would stimulate intelligent marketing and aggressive salesmanship.

In New York, conditions have degraded to such a level and to such an unsatisfactory situation that the more responsible members of the trade have organized a group known as the "New York Butter & Egg Council," whose objective is to endeavor to revamp trading conditions. Last week a questionnaire was sent from headquarters and one of the questions referred to the adoption of the commission business. The answers indicated that 85 per cent were in favor of the commission form of business.

It is my honest conviction that our present situation is due to our new methods which have proven to be unsatisfactory and impracticable, and that the adoption of the commission form of business universally is the answer to the situation, and if adopted, would restore our industry to a successful and profitable enterprises for all concerned.

☛ TURKEY poults are taught to eat on the Purina Mills experimental farm by placing them in battery brooders for two weeks with baby chicks.

Fever Therapy for Turkey Disease

Fever therapy, similar to treatments developed in recent years for the cure of syphilis in humans, has proved effective, in preliminary studies by the U. S. Bureau of Animal Industry, in treating turkeys for a disease of the digestive tract and liver that is usually fatal. Infected birds were confined in a smaller chamber which was heated by electric light bulbs to a temperature that raised the body temperature of the birds about two to four degrees above normal. After from three to six treatments on alternate days, 20 out of 24 turkeys recovered as compared with 7 deaths among 9 untreated birds similarly infected by the parasite that causes the disease known as trichomoniasis.

The parasite that causes the disease is a protozoan, as in malaria and other diseases. Turning on the heat is more deadly to the parasite than to the host. The turkey goes through what amounts to a limited baking alive, but the bird survives in most cases although the parasites usually die. Effects of the disease closely resemble those of the equally deadly turkey disease known as blackhead, but the cause is distinct. The symptoms of trichomoniasis, according to Marlow W. Olsen and Ena A. Allen of the Bureau of Animal Industry, who have studied the disease and developed the fever treatment at the Beltsville Research Center, are droopiness, loss of appetite, and loss of weight. The droppings become quite liquid and light yellow in color and microscopic examinations usually reveal the parasite responsible. The investigation is being continued.

—The Missouri Farmer, October 1, 1940.

Move Feeders Often

Good producers follow the practice of moving their feeders every day or so. The reason for this is simple: no feeder has been devised that will entirely keep the birds from wasting or dribbling feed. This dribbled feed falls beside the feeder, turkeys evacuate on it, tramp on it with dirty feet. When enough of it accumulates they start eating it. If the feeders are moved often, there is not enough accumulation to tempt the birds to pick it up.

—Norbest Turkey News, August, 1940.

☛ ONLY one bird, the ostrich, possesses a bladder, says E. S. Weisner, extension poultry pathologist, Michigan State College.
—Journal of the American Veterinary Medical Assn., August, 1940.

Diary of a Poultryman

By PERCY S. WHITE
Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

October 2 — This is the month when I usually house the pullets, but unless the weather turns cooler I think the birds are better off out doors. It is so warm that they will get into mischief if confined to the laying houses. And by mischief I mean they will start to pull feathers. This is really just a playful act. One bird rushes up to another and grabs a beakful of feathers. It corresponds to tweaking a girl's hair — a school kid trick. But if the feather follicle starts to bleed, the playful act soon develops into an act of pure cussedness. This cannibalism is one thing that I am afraid of when once it gets started.

October 3—We are going to start in with our regular fall work. When the weather turns cooler we will take care of the pullets. This afternoon we ground several tons of corn cobs. The ground cobs are used behind the cows, in the long house manure carriers and on the dropping boards. There is nothing like having a lot of dry something to use in the winter even if it is ground corn cobs.

October 4—Did some patching on the east house roof. Composition roofing may be guaranteed for 16 years, but it has been my experience that it starts being shot full of holes at about 10 years. I wrestle with it for a couple of years and then replace with a galvanized roof.

October 5—Picked up a few odds and ends of running gears for today's sale on the auction. They do continue to crop out occasionally. There are still a few husky cockerels that are roosting high, wide, and handsome in the trees. They are too foxy to be caught in the houses and they can spot a catching hook as if it were an airplane flying low.

October 7—Visitors this morning, and Saturday at that. Fortunately, we were well up with the work and, with Donnie at home, there was no hardship on us. About this time of the year folks begin to get the chicken fever. They get to thinking about winter eggs and how nice it will be to go out in the laying house and gather huge baskets of them. Yes, I like to build air castles, too. It is fine for the imaginative brain, but I learned long years ago that there is a whole lot that comes before one can go out in the coop and gather baskets of eggs.

Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.
(Everybodys Poultry Magazine, October, 1940)

October 11—I think that in about another week we had better start bringing in the pullets. It is getting that time of year when I start to get uneasy. In the spring I get uneasy about getting the chicks started and in the fall it is still quite warm, but on the other hand almost anything can happen. If it should, by any chance, turn off cold and wet, pullet housing would be a major problem. We could catch them easy enough, but it wouldn't be very pleasant handling them in the rain. Also, there is the danger of them catching cold. The houses are all ready to start filling, but I believe it will be best to wait a few days.

October 12 — The rye, which was sowed when the sweet corn was cut in the truck patch, is growing well. But in order to make it grow even better we gave it a top dressing of manure today. The pits in the block house were cleaned and the proceeds plastered on the rye. Ground corn cobs were scattered on the pit floor after cleaning.

October 17 — The weather has turned cooler, so I think we had better start moving in the pullets. It will take several weeks to get them all housed and it seems to me that it is getting about time to start. The pox vaccine came several days ago. The pigeon strain will be used again this year. Some folks say that the lasting effects of the pigeon strain are too short, but there has never been an outbreak in the eight or nine years I have been using it. The vaccinating table has been dusted off and a supply of hog rings has been bought. Hog rings make a leg band that stays put, and there is no question about it.

October 18—We cleared the three bended bow rafter brooder houses today, 125 birds in all. Tomorrow it will be No's. 1, 2 and 3 in the woods; Thursday No's. 4, 5 and 6. I don't believe in going about this housing too fast. It saves much time and patience if the laying houses are filled slowly because the older birds show the newcomers where the water, feed and perches are.

October 19—Eighty-five birds were roosting in the three houses. Twenty were held over in the battery from yesterday. I buy the vaccine in 100-dose vials and we vaccinate in units of around 100. The directions say not to use the vaccine after it has been mixed over 12 hours, so the 100-dose unit seems to be about right for our conditions.

October 20 — All the brooder houses have been cleared, and any bird that we catch from now on is one that has been roosting in the trees. Altogether, we have vaccinated and housed 295 and there are eight in the battery. I didn't want to mix another batch of vaccine just for them, so they will be held over until Monday. It is Donnie's job to see that all the pullets are on the perches at night. The easy way to train those that are not yet housed is to train those that are housed. If the ones we have caught know where the perches are, the new arrivals will naturally follow the leaders when they go to roost.

October 21—Today was cleaning and catch-up-in-general day. I think it has been a rather successful week. While we didn't get so many pullets vaccinated, we did get started. That is the big idea around here — to get started. Those birds that we did house are becoming acclimated. They don't wander around any more with that lost attitude. When they get hungry, they go to the feeders and eat. They have ceased to explore; they seem to know what it is all about. And that is more than I know about this chicken business. I can figure out on paper how I can retire in 10 years, but it doesn't seem to work that way in reality.

October 25 — We made a "blitzkreig" on the pullets. We really went places and did things, housing 218 and have 69 in the battery to start on tomorrow. Ten big cockerels were also caught, but they don't count as laying stock. Several others have been picked up during the last few days and all will be sold tomorrow. There will also be a coop of cull pullets to sell. They are little ratty fellows that I don't think it will pay to keep.

October 26 — The battery is all clear and we are ready to start housing again tomorrow. All of the cull birds were sold this morning. This afternoon we caught enough birds to take a batch of vaccine with the hold-over from yesterday.

October 27 — I don't understand why an electric lamp will burn out when not in use, but that is what apparently has happened. They were all right a few weeks ago when the three north houses were cleaned but 4 of the 15 were on the blink today. I have made it a rule to keep a stock on hand all the time, so it was just a question of replacement. The pullets will get "lit up" tomorrow at 4:00 a.m. The lights ought to pep up egg production. There is no question about my needing more eggs. I never complain about over-production.

October 28 — Donnie spent most of the day on the range catching pullets. I can't see to save my life why the birds have so much curiosity about the colony houses. I guess it must be feminine curiosity for 10 or 12 will go inside at a time. Donnie will rush up, close the door and put them in a coop. Then, while he goes on to another house, more will go

in. He uses a wheel barrow to bring them to a central point and the coops are loaded on the truck. Grading, vaccination, banding and distribution to the three laying houses are the next steps.

October 31—Here it is the last day of the month and tomorrow I am going to get a shower of mail. I always dread the first day of the month because the surprises are always so costly. If these pullets are not housed and some residue left in the nests, there won't be very much where-with-all to meet the obligations. These birds are not woodpeckers so I can't feed them sawdust.

More Eggs per Bag of Feed

As we travel around the country, poking our noses into people's poultry houses, we become more and more impressed with the importance of what might be called the "3 C's" of poultry management. These are Cleanliness, Comfort and Convenience.

Cleanliness in the laying house seems to serve a double purpose. First and foremost, of course, it helps to protect the birds from disease. The cleaner the house, and the less chance the birds have to come in contact with droppings, the less likely are they to pick up injurious germs. The same thing applies to cleanliness of feeders and waterers. There is probably no better place for germs to live and multiply than in the thin film which forms on the inside of a watering pan, if it is not washed and disinfected every day.

In the second place, it seems to be a fact that pullets will eat more feed, and drink more water per day, when their feeders and waterers are kept strictly clean. Now, we all have seen hens drink from barnyard puddles after a rain, when they could get clean water only a short distance away — and have heard people remark that if a hen will do that, there's no need to be so fussy about clean water and clean waterers in the laying house.

In the writer's humble opinion, the main thing that makes a hen drink from a puddle is "convenience." The puddle is right there in front of her, so she drinks from it—but if the water was clean she would probably drink more. And when pullets are in heavy egg production, we certainly want them to drink every drop of water that we can possibly get into them.

The same observation points to the value of providing enough feeders and waterers, and placing them so birds can eat and drink conveniently.

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When the waterers are placed near the feeders, so the birds can turn from one to the other conveniently, it stands to reason that they will eat more as well as drink more—particularly in the case of dry mash. And that also helps to promote better production. We know of one man who raised his egg production from a very disappointing level to a highly satisfactory one by the simple process of setting half a dozen buckets of water near the feed hoppers. Previously he had had only one waterer in the pen — for some 150 birds. It was plenty big enough to hold all the water the birds needed, but it was just "too much trouble" for them to go and get a drink as often as they should have done.

Bird comfort depends largely on two things—plenty of floor space and good ventilation. The less the amount of floor space per bird, the better the ventilation must be.

Cleanliness, convenience and comfort are all helps to one main objective that every poultry-keeper is striving for—More Eggs per Bag of Feed.

—Checkerboard News, August-September, 1940.

Chickens Pick Favorite Color

Chickens like green better than any other color, regardless of the color of the chicken or the fact that a black hen will lay a white egg. At any rate, when 5 glass drinking fountains were lined up in a row, each one containing a different color of water, the layers drank all of the green water first, red next, then brown, and yellow. Clear water was left until last, despite the fact that the hens had been used to clear water all of their lives.

Apparently this proves that chickens can tell the difference between colors. Such small amounts of coloring matter were used that taste had nothing to do with their preference for green water over the red or brown. Maybe in the future somebody will use color schemes to urge hens to eat more feed to produce more eggs and meat. And we might put one over on the chickens if the feed or water were put in colored containers, rather than coloring the food and drink for the flock. On the other hand, the hens might be smarter than we think and colored containers would prove a fizzle.

This colored water try-out was discovered when your reporter took a 12-hour "short course" on poultry diseases and their prevention at the Dr. Salsbury's laboratories and research farm at Charles City, Iowa.

—Raymond H. Gilkeson, Kansas Farmer, October 5, 1940.

Practices Which "Nick" Poultrymen

By GILBERT GUSLER

Condensed from American Poultry Journal

MUCH has been done in the last dozen years by means of federal and state license and bonding legislation, by the Packers and Stockyards Act, and by the "G-Men" to clean up evils in marketing that "gyp" the poultryman, but it's still a naughty world. This is, however, not an indictment of honest dealers.

Some of the practices which take advantage of or cheat the producer are equal to plain theft, while others scale down to minor degrees of unfairness in bargaining.

Fly-by-night truckers who give bad checks are among the worst types. The number of such operators is quite small, of course, but they do show up occasionally. Last winter produce trade papers carried announcements that "G-Men" were looking for a trucker who had used 28 different aliases and who had passed worthless checks at many points throughout the United States. A short time ago, a man who had been a poultry buyer in the Arkansas broiler area for several seasons passed bad checks totaling over $10,000 and then disappeared.

Many of the states have laws which require that local dealers take out licenses and file bonds if they buy as much as one shipment. Those who handle as much as a ton of perishable fruit and vegetable produce in interstate commerce must have a federal license. Once in a while some one tries to operate without meeting these requirements.

Investigate New Buyers

Whenever a strange trucker or one not known to be reliable appears, investigation should be made at the bank before accepting any check in payment for produce. If the bank is at a distance or out of the state, U.S.D.A. officials recommend that the trucker be asked to wire for the money, the seller offering to pay for the telegram. Even though the trucker may have a license, he may have lost money and become insolvent.

During the depression, many unemployed men got hold of trucks and, with shoestring finances, attempted to gain a livelihood in this field. Increasing competition has tended to narrow handling margins and, with widely fluctuating prices, has added to the hazard of doing business. Hence, it is not surprising that checks sometimes bounce in

American Poultry Journal, 536 So. Clark St., Chicago, Ill.
(American Poultry Journal, September, 1940)

spite of licensing safeguards.

Once in a while, crooks open an office on a central market, especially during the fall marketing season, then send out cards or letters soliciting shipments from producers. They quote high prices, and claim to have exceptional market outlets that enable them to sell poultry to better advantage than other dealers. They may advertise in local papers or get some reliable local man to solicit shipments for them. They may send no return payment, and merely disappear after disposing of their haul. On dressed poultry shipments, they may make a small remittance and claim spoilage. Since reliable dealers also solicit business by similar methods and since spoilage often does occur, the crooks can't be readily identified from surface appearances, although offering prices above the market is a suspicious sign.

Watch Financial Ratings

Financial ratings of commission men in central markets are obtainable through banks or county agents. Only recent ratings should be depended upon since many changes are taking place in this field, and once strong firms may have gone into receivership or quit business.

Dealers on 16 of the larger live poultry markets are under Packers and Stockyards Act Supervision and must have federal licenses. Hundreds of smaller markets, however, have no such supervision.

Local dealers or national packers with country plants may take advantage of producers' ignorance of market values. They may not pay premiums for top grades or may discount excessively the lower grades of eggs, or lighter breeds of poultry, or may seek to buy at unchanged prices when the general market has advanced.

Radio market reports and wider distribution of daily newspapers have greatly reduced the opportunity to do such things, if producers make any effort to keep themselves informed.

Trucks Promote Competition

Years ago, there may have been some splitting of territory by the larger packers to reduce competition in buying. With truckers now running everywhere, it is hard to find a spot where producers do not have a chance to get bids from two or more buyers.

On the central markets, receivers sometimes engage in practices disadvantageous to producers. One of these arises out of the fact that many receivers are both commission merchants and dealers on their own account. A receiver may have for sale, on the same day, shipments consigned to him as a commission man and shipments he owns outright through purchase in the country. It would be hard to convince most people that in such cases, the receiver's own shipment is not favored in making sales.

In New York City, many sales of live poultry in the past were made without agreement as to the price. It is asserted that receivers might sell to a slaughterer, filling half the order from his own car and half from a consigned car. He might bill the slaughterer for an average of 20 cents, allotting 21 cents for his own poultry and 19 cents for that sold on commission, even though the poultry was of the same quality.

Many receivers have extended credit to slaughterers in order to hold their trade. In such cases, the receiver's interest is likely to be in collecting his own money rather than in making sales at strong prices for the benefit of the producer or country shipper.

Misrepresentation of Grades

Central market receivers sometimes take advantage of the producer by misrepresenting the grade of eggs and poultry received. According to Packers and Stockyards Administration officials, a Chicago dealer sent out letters to producers last fall guaranteeing "one-half cent over top market day of arrival, net, no commission." In Iowa a woman sent a shipment of springs when the market was 14 cents and, under the guarantee, should have received 14½ cents. Instead she received 12 cents, the dealer claiming that the shipment was "poor and thin, not grading better than No. 2." The letter soliciting shipment had not mentioned grade. The dealer was required to pay 14½ cents and agreed to discontinue misleading advertising.

Dealers on central markets have a limited amount of power to push prices slightly and temporarily out of line with supply and demand conditions. On the New York live poultry market, for example, the practice for years was to restrict active trading before the publication of the "quotation" but to make deals providing for settlement on the basis of the quotation that would be announced later. Hence, the receivers and slaughterers made the utmost effort to control the quotation in order to protect their previous commitments. Sometimes early trading was done at fictitious prices in order to influence the quotation. With the slaughterer in debt to the receiver, such arrangements were easy to make. These were referred to as "monkey" sales, the "monkey" being the man who agreed to accept the poultry at a false price.

Methods of Controlling Prices

One of the most common objects of various organizations or receivers and slaughterers on the New York live poultry market over the last 25 years was the control of prices by limiting competition, boycotts, and the like. They have led to indictments and injunctions a number of times. In 1929, 66 individuals in the

New York trade were fined or imprisoned and enjoined against future conspiracies to restrict trade and control prices.

The Packers and Stockyards Act was intended to prevent all such unfair, unjustly discriminatory and deceptive practices or the control of prices and establishments of monopolies. Officials held a six months' hearing early in 1939 on abuses in the New York market. On June 17 of this year, orders went into effect directing receivers to cease and desist from recording and reporting prices other than those at which sales were actually made and from making settlement with buyers upon the basis of prices other than those at which the sales actually were made. The examiner had recommended that receivers should cease to be both handlers on commission and dealers on their own account but this has been held in abeyance until a projected central terminal has become a reality.

"Rooked" by Marketing Costs

Producers are "rooked" at times by unduly high marketing costs. Here, again, the New York live poultry market provides the star example. Due to the unloading coop and truck monopolies, the cost of unloading and trucking a car of live poultry from the railroad yards to the main market formerly was about three times as much as in Philadelphia. The Packers and Stockyards Administration has been only partially successful in eliminating such abuses. In May, 1937, the unloading charge was ordered to be reduced to $41, but a few months ago 7 unloading contractors were indicted because they were still charging $52, the old rate. High marketing charges may reduce the net returns to the producer or they may raise prices to the consumer, which injures the producer by curtailing consumption.

For producers, the moral of all this is plain. Eternal vigilance is necessary against dishonest dealers or those who are on the financial ragged edge. Licensing and bonding laws are only partial protection. Established dealers, caught in some unfair practice, may make restitution for fear of loss of license. But recourse to criminal or civil courts may be the only way out with crooks or with dealers who have gone broke, although bonds in New York state are used to insure payment of shippers if a dealer quits business. Court action will not recover money due if the person or firm has no resources.

❧ OREGON restaurants, hotels and taverns are displaying colorful posters picturing boiled eggs, cheese and beer, according to the Eggsaminer. The Oregon Brewers Association is sponsoring the drive in connection with National Dairy Month.

Union Station for Poultry

By WEBSTER BIRDSALL

Condensed from Everybodys Poultry Magazine

AT 5:30 in the afternoon of June 30, the City Council of New York City passed a law "to amend the administrative code of the City in relation to poultry."

Thus was completed the legislative program believed necessary for the construction of a modern central live poultry marketing terminal in New York City and the operation of such a terminal in the interest of the entire poultry industry. Preceding this local law, an enabling act was passed at the 1940 winter session of the New York State Legislature.

In the meantime, the Mayor's Live Poultry Terminal Committee, consisting of representatives of producers, country point shippers, receivers, wholesale slaughterhouse and retail slaughterhouse operators, had frequent meetings with City Market Commissioner, William Fellowes Morgan, Jr. and his associates relative to the construction and operation of such a market. Also, the city budgeted half a million dollars for use in constructing such a terminal. A few thousand dollars of this sum were made available immediately so architects could proceed with construction plans.

Plans for the construction of a Live Poultry Marketing Terminal have already been turned over to Commissioner Morgan for approval. At the new terminal, all live poultry entering the city will be received, whether it takes its last ride from the producing area by motor truck, in a chicken pullman, through the air, or over the water. It will be a union terminal in every respect. Here, too, all live poultry offered for sale for human consumption to the more than 7,000,000 people inhabiting New York City will receive a final inspection for health and condition.

Site Chosen

A site sufficient in size to meet the present and future needs of such a market has already been selected. It is advantageous from both a receiving and distributing standpoint as it is on the water, at Newton Creek where it joins the East River.

Ninety per cent of the wholesale slaughterhouses operating within the city limits are within 2½ miles of this center. That factor will contribute to cheaper distribution.

Of course, some objections can be

Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.
(Everybodys Poultry Magazine, October, 1940)

raised to this site. All rail shipments must be delivered by lighter. On some days, Mother Nature will take a hand in the proceedings, with her fog, wind, and ice, making deliveries impossible. The Weather Bureau, however, states that this happens on the average of only four days a year. When one figures that such a situation may occur on light or non-market days, with no rail deliveries to be made, or studies the advantages of ample space for all modern facilities and expansion, centralization of all receipts and wholesale trade, and the expediting of motor deliveries and distribution, this objection is inconsequential.

After considering every known factor, the Mayor's Committee approved this site as the best available, and their minds were on improvement and efficiency in the marketing process.

Will Centralize Marketing

A New York City central live poultry terminal has been a dream for years. Much effort has been expended toward that end in past without avail. Today, carlot shipments of live poultry are received at the 60th Street market in Manhattan. Some four miles south is West Washington Market, a city-owned facility, where the bulk of trucked-in poultry is received. In addition, there are 15 or 20 other points in the city which receive live poultry by truck.

With unforeseen and sometimes unknown arrivals at such scattered receiving points, the difficulty in arriving at fair market prices from day to day is obvious. The unknowns in the price-making structure present risks to the producer and the trade. Many times these risks are translated into losses. The fact that this situation will be entirely overcome when trading starts on the new terminal is in itself sufficient justification for the construction of the new market. Market supplies and conditions may be definitely ascertained, and more order and more stability in the marketing procedure will result.

Highly Unionized Business

Poultry markets of New York City are highly unionized. A truck-riding chicken, on arrival at a receiving market in New York City, will first go into the hands of a member of the Carmen and Handlers Union who will place the coop on a truck. Here a member of the International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers Union known as a "stand man" will take over, transferring said chicken to the receiver's coop and then placing the coop on a scale to be weighed by a member of the Weighmasters Union. Thereafter, the "stand man" again takes charge.

If the chicken is destined for a kosher slaughterhouse, it will again come in contact with members of the International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers Union as well as a member of the Schochtim Union who does the slaughtering. A member of the Plumbeerer's Union will attach a metal tag known as a "plumba" to the chicken's leg identifying it as kosher-killed. In addition, there is the Poultry Worker's Union to which pluckers, office workers, and salesmen belong.

Until the advent of Mayor La Guardia, Commissioner Morgan, and District Attorney Dewey, this complete organization seemed to be a stumbling block in the path of live poultry marketing progress. This trio did a remarkable clean-up job. The new freedom of labor, the provisions of the new administrative code in relation to poultry, and an attempt at cooperation between the factors of the live poultry industry, when once the new live poultry marketing terminal is in operation, should lead to an improved labor situation. For one thing, it is certain that it will bring about a much shorter, faster market, saving many hours of overtime each market day.

New Type Scale to be Used

One could hardly skip by the question of weights when considering the improvements in the marketing procedure that the new terminal will bring. Is there anything that has been cussed or discussed more? The city's new poultry code provides for the licensing of weighmasters and for rules and regulations governing their operation.

Of course, the new market will be declared a live poultry marketing terminal under the provisions of the Federal Packers and Stockyards Act.

The regulatory features of this act, especially those concerning rates and trading practices, will assist in maintaining an efficient, reasonable operation, free from the rascalities of an earlier day. This act is administered by the Agricultural Marketing Service of the U. S. Department of Agriculture.

To Have Advisory Council

The operating plans call for the organization of an advisory council with a membership consisting of representatives of producers, country-point shippers, receivers, slaughterhouse operators and, perhaps, labor, to meet from time to time with the Commissioner of Markets of the City of New York to consider matters pertaining to the operation of the terminal. This advisory council should prove a constructive, rectifying, stabilizing force which, in conjunction with the various laws, can assure a well conducted live poultry market in the City of New York.

POULTRY RESEARCH

Crooked-Toe Deformity of Chicks

The number of chicks afflicted with crooked toes in lots confined on paper-covered floors was much greater than the number confined on wire-mesh floors, states L. C. Norris of Cornell University, reporting in Feedstuffs, August 17, 1940, on work carried on at Cornell by J. C. Bauernfeind, C. D. Caskey, and himself.

The severity index, which represents the degree of toe curvature, of lots on paper-covered floors varied from 1.32 to 1.63, while that of lots on wire-mesh floors varied from 0 to 0.07.

Experiments indicated that the deformity was not due to a deficiency of riboflavin and that the percentage of crooked toes was not appreciably diminished by injection of manganese.

Vaccination for Coryza

The administration of three doses of avian mixed bacterin to a flock of pullets among which infectious coryza had been present for two months did not have any curative effect on birds already infected and did not give protection to the birds which were not infected at the time of vaccination, report J. R. Beach and R. A. Bankowski, University of California, in the Journal of the American Veterinary Medical Association (Vol. 97, No. 763).

The flock under test consisted of 810 White Leghorn pullets about 5 months old. All birds were examined for the presence of coryza, and 429 were found to be infected. Of these, 292 were vaccinated with three doses of avian mixed bacterin, each dose consisting of 1 cc. given at three-day intervals. The other 137 infected birds were kept as controls.

Observations at the end of six weeks showed little change in the condition of the birds. Of the vaccinated group, 90.7 per cent were still infected, compared to 96.2 per cent in the control group. Recoveries in the vaccinated group totaled 9.2 per cent, compared to 3.6 per cent in the control group.

The birds in the original flock showing no coryza were divided into two groups, one of which was vaccinated, while the other group was used for controls. The proportion of birds which became infected during the six weeks period was 40 per cent for the vaccinated group, 39.4 per cent for the nonvaccinated group.

The authors suggest that "it would be well to obtain a more complete evaluation of the worth of the product by additional controlled field trials under conditions which might be considered as more propitious, such as preceding or immediately after the appearance of the disease in a flock."

Inheritance and Variation of Blood Spots

There was no significant correlation between percentage of blood spots and egg production, egg weight, or body weight in a study carried out by J. P. Quinn and A. B. Godfrey of the U. S. D. A., says a report in Poultry Science, Vol. 19, No. 5.

Ordinary commercial methods of candling eggs were found to be totally inadequate in detecting blood spots.

A statistical analysis indicated significant breed and family differences in both yolk and albumen spots.

Iritis Transmission Experiments

When iritis (fading of the iris) males were crossed with iritis females, 21 of 26 progeny developed some form of range paralysis; when normal males were crossed with iritis females, 17 of 25 progeny developed some form of range paralysis, and when iritis males were crossed with normal females, 6 of 40 birds developed some form of range paralysis, report C. D. Lee, and H. L. Wilcke in Veterinary Medicine, October, 1940.

All eggs and the chickens hatched from them were handled so as to avoid any possible infection, and the conclusion was that the infection was transmitted through the egg.

Attempts to transmit the disease by injection of ovarian tissue, testicular tissue, and blood from iritis birds gave positive results in a large percentage of attempts carried on at the Veterinary Research Institute, Iowa State College.

Effects of Shipping and Feeding on Chick Weight and Livability

Surviving chicks from groups expressed to various destinations and back with 24, 48, 72, and 96 hours in transit, without feeding, were brooded for 8 weeks, with weights taken at two week intervals, and it was learned that chicks losing the most weight in shipping overcame the handicap and by 8 weeks were about 95 per cent as heavy as chicks weighing the most at the initial feeding, according to U. S. D. A. workers M. W. Olsen and B. Winton, reporting in Poultry Science, Vol. 19, No. 5.

Environmental conditions during transit, the length of time without feed, and the distance shipped were found to be important factors in the subsequent growth and livability of chicks.

Paratyphoid Infection of Turkeys

It was established by B. S. Pomeroy and R. Fenstermacher of the Minnesota Agricultural Experiment Station that the shell of turkey eggs may be easily contaminated naturally with Salmonella; that, when such eggs are incubated, a high percentage of the embryos will be infected, many of them dying; that poults hatched from such eggs will suffer high mortality from Salmonellosis, and that an incubator may remain contaminated from one hatching to the next, if not disinfected, according to a report in Veterinary Medicine, July, 1940.

Results With All-Night Lights

Conclusions on a 10-year study on the effects of all-night lights on the egg production of 899 S. C. White Leghorn pullets are reported by Robert Penquite and R. B. Thompson, Oklahoma A. and M. College, in Poultry Science, Vol. 19, No. 5, as follows:

1. All-night lights did not increase or decrease the annual egg production of pullets or hens.
2. Artificial lights increased the percentage of production of hens and pullets during the months of November and December every year but one during the 10 year period.
3. The hens and pullets exposed to all-night lights laid fewer eggs in March, April, and May than the controls (without lights).
4. A greater response in the October, November, and December egg production with yearling hens.
5. All-night lights may be beneficial during hot weather (July, August, and September) but the results secured are not conclusive.
6. The use of all-night lights did not have a deleterious effect on hatchability or adult viability.
7. No significant difference in feed consumption.

Odd Case of Cannibalism

An outbreak of cannibalism in which the lower eyelid was attacked is reported by Cliff Carpenter, pathologist of Allied Mills, Fort Wayne, Indiana, in the Journal of the American Veterinary Medical Association (Vol. 97, No. 763). The outbreak occurred in a flock of 650 White Leghorn pullets 11 weeks old while on range. In all, 18 pullets were so attacked.

Since cannibalism in poultry usually manifests itself in feather pulling, tail picking and pick outs, the author suggests that the first bird injured might have injured its lower eyelid, drawing blood and causing its mates to attack other birds in search of the same good tasting material.

Date of Hatch and Egg Weight

November and January hatched pullets produced more pullet and peewee eggs than did birds hatched in April, June, and September in a study carried out at the New Jersey Experiment Station by F. P. Jeffrey.

June and September hatched pullets produced a high percentage of medium eggs, while January and April hatched pullets produced a large percentage of large eggs, says the report in Poultry Science, Vol. 19, No. 5.

Egg weight of birds of the same breeding appeared to be determined at any particular time by the interaction of age, temperature, and body size. Rate of egg production was not of great importance in relation to egg weight.

Because of the association existing between age of bird and body size, the effect of temperature was expressed chiefly in changing the rate of increase in egg weight of the different hatches. After 52 weeks of age, high temperature tended to reduce egg size. In some instances small birds produced larger eggs than did large birds of the same age and breeding when temperatures below normal prevailed for the former and above normal for the latter.

Turning Turkey Eggs

Hatching results on a basis of fertile eggs set indicated that the turning of turkey eggs could be discontinued prior to the twenty-fourth day without ill effects, according to the report of W. M. Insko and Arthur T. Ringrose in Poultry Science, Vol. 19, No. 5.

Tests carried out at the Kentucky Agricultural Experiment Station of 5,662 turkey eggs indicated that hatching operations could be significantly speeded up by discontinuing turning a few days prior to the customary twenty-fourth day.

Chicken and Eggs for the Elite

A former socialite has turned the tables on night club proprietors, according to the Philadelphia Inquirer. Mrs. Betty Glazebrook has developed a profitable chicken and egg route among such exclusive spots as the Stork Club, Club 21, the Colony, Westbury Club, and Chris Manning's.

By following sound production rules, this wife of a former Wall Street broker has put her broiler and egg business on a profitable basis, marketing 60 dozen eggs and 600 birds weekly at premium prices.

Special recipes for Glazebrook broilers are featured at some of the night spots. The exclusive clubs price portions at $3.00 to $5.00 and seem to be well satisfied at having one of their patrons frequent both back and front entrances.

Was it the Feed?

By J. E. DOUGHERTY

Reprinted from Nulaid News

"WAS it the Feed?" is the title of a little booklet recently brought to our attention. It represents the findings of a survey to learn the experiences of state feed control officials with feeds suspected of causing the death of animals and poultry. Inquiries were sent to feed control officials in each state requesting summaries of actual cases of suspected feed referred to them for investigation.

As our readers probably know, in practically every state livestock and poultry feeds offered for sale are subject to regular inspection and analysis by disinterested state officials charged with the enforcement of feed control laws. These laws are designed to prevent the manufacture and sale of any but wholesome feed products properly labeled to inform users concerning their quality and suitability for the purpose. By means of microscopic examination, chemical tests, and, in many cases, actual feeding trials, the feed samples taken by the state inspectors are tested to insure that they measure up, and suspected feeds are carefully checked for poisonous substances.

The survey reveals that these state officials are continually being called upon to check complaints from producers who are certain that poison in the feed caused their stock or poultry to become unhealthy or die. But, they report, based on their many years of checking these "suspected" feeds, poisonous ready-mixed feeds are almost as scarce as hens' teeth. And hens' teeth are not any too numerous, as we all know.

It is to the interest of the mill that makes the feed and the dealer who sells it to supply users with feeds that get good results. A successful business cannot be built on dissatisfied customers. So the customer's interests are also the feedman's, insofar as seeing to it that the feeds give satisfaction.

Put to Tough Tests

There seems to be quite general agreement among state feed control officials that in their years of testing samples sent in by poultrymen, it has been rare indeed to find any evidence that the feeds in question were harmful to the health and well-being of poultry. As one official put it, many samples of mixed feeds have been submitted. Some of these were accused of killing birds by the score. But not a single one of them has been found to kill healthy birds in feeding trials, even though the possible deleterious effects were emphasized as far as possible by making the feed the sole ration after a starvation period. It was concluded, therefore, that any serious mortality in poultry flocks has been due to some other factor than the feed or to a complication of factors involving disease and parasites.

Another state official reports that the detailed testing of suspected feeds sent in by poultry raisers has not shown any of them to be injurious in any of the tests made, including the feeding of adequate amounts to test animals. Even feeds claimed to have been moldy did not in any way hurt the test animals they were fed to. The cause was something other than the feed.

Manufacturers Do a Good Job

Thousands of lots of feeds accused of injuring the poultry are sent to the laboratories of state feed control officials every year. And in practically all instances, careful tests, including controlled feeding trials, fail to verify the claims. We do not mean that commercial mixed feeds cannot go wrong. It would appear, however, from the years of experience of our state feed control officials and the growth of the poultry and stock feed industry throughout the country, that the manufacturers of these feeds are doing a very fine job.

In this connection, the user of feedstuffs has a responsibility, too. A responsibility to himself and to his poultry. It is much more to his interest to prevent mishaps than to suffer them. It is reasonable to expect that he will be constantly on the alert to immediately detect off-odors, suspicious lumpiness, indications of unpalatableness, etc. Feed does not have to be unwholesome or in any way injurious to give unsatisfactory results. It may not taste right to the chickens, yet may smell, taste and seem perfectly sweet and wholesome in every way to the feeder.

Chickens are Fussy Eaters

We know just about nothing about the reactions of chickens to flavors and odors. We know that they are creatures of habit who do not take kindly to new and unfamiliar grains and mashes. They may refuse smutty wheat at first. But feeding trials have been run to prove that smutty wheat will not hurt them, and they will eat it about as readily as sound wheat when they become accustomed to it. They must eat more, however, to get the same amount of nourishment.

Fresh mash is eaten more readily than stale. Liquid milk seems to make a mash more appetizing than water. Appetite hinges a great deal on the health and vitality of poultry, just as it does in humans. Sick birds are poor eaters.

Producers Company, Ltd., 840 Battery St., San Francisco, Calif.
(Nulaid News, September, 1940)

The Feeder's Responsibility

But appetite is easily observed. Unfavorable developments are quickly noted and investigated by the skilled feeder to determine the cause. Is it the feed? Is it worms? Is it lice and mites? Is it some form of coccidiosis? Whatever the cause, the quicker it is determined, the better. That is the feeder's responsibility. For successful poultry keeping depends as much on good management as it does on good feed.

"The eye of the feeder fatteneth his cattle" is an adage that applies just as forcefully to poultry feeding as it does to feeding stock. The best of feeds minus the requisite skill on the part of the feeder to utilize it most effectively will not give optimum results. The man behind the feed is just as important in getting results as the man behind the gun.

Feeding Skill Important

All too often the feed itself gets all the blame for results which skillful feeding methods could have largely prevented. In spite of the very important role played by the feeder in getting results, many poultrymen think too little about the "how" of feeding, and too much about the feed itself — putting the cart before the horse. Reversing the process is generally productive of more profitable results. A full understanding of the importance of feeding practice and the possibilities of building greatest effectiveness into a feeding system by the feeding methods used is indispensable in obtaining most fruitful results from every feeding dollar spent.

Cooling Eggs Profitable

Eggs sold by Mrs. John Dunn of Caldwell county, Missouri, have averaged as much as 7 cents per dozen above local prices this summer because of their high quality. She attributed the good grade of her eggs to the care given them before marketing. Since a premium for quality eggs is usually greater the latter part of the summer, good care has been the most profitable during the past month.

Mrs. Dunn constructed an egg cooler in her cellar. Sand six inches deep was placed in the bottom of a frame, which was large enough to hold several egg cases and a wire tray. The frame was covered with sacks and these sacks were kept wet. This method of cooling also keeps the eggs moist and retains their good quality. The temperature in the egg cooler in the Dunn cellar has been about 65 to 70 degrees Fahrenheit during the warmest weather.

—University of Missouri news release, October 9, 1940.

When It's Cut Up — It Sells!

By MARY C. CLARKE

Reprinted from The U. S. Egg and Poultry Magazine

CHICKEN sold by the piece! Where can I buy it?" That's the question Chicago consumers are asking eagerly these days. And that's the way they are buying their chicken.

Sales have increased so rapidly since Chicago merchants began handling cut-up chicken that both retailers and poultry packers are gasping "Phenomenal!" and wondering just how long this enthusiasm on the part of the consumer will last.

Opinion on this ranges all the way from the doubt of one packer, who dismisses cut-up chicken as a fad and considers it a "peanut business" as far as the packer is concerned, to the extravagant confidence of one retailer, who believes that eventually people "will refuse to buy chicken any other way."

But most of them think the demand will last. Sold by the piece, chicken is peculiarly adapted to sale in metropolitan areas. It is convenient and economical. It eliminates left-overs, the bugbear of small families. And it has taken chicken out of the Sunday dinner class for the great mass of middle-class buyers who have necessarily reserved chicken for special occasions.

What the Merchants Say

"I think this method of merchandising chicken is here to stay," says F. J. Lunding, general manager of the Jewel Food Stores. "At least 90 per cent of our fryers and 25 per cent of our stewers are sold by the piece today. And we are selling two and a half times as much chicken per market now as we sold a year ago."

National Tea is selling chicken by the piece in 15 stores and has a separate poultry department in one Evanston store. Cut-up chicken is moving fast in all of them and managers feel it is responsible for their increased poultry sales this year.

Speaking for the A. & P., Randolph Cruzen says: "We have increased our volume in fryers considerably since we started to cut them up."

The rapid expansion of William C. Grunow's chain of chicken stores indicates there is a growing market for cut-up chicken in Chicago. Starting with one store in March, Grunow now operates six stores, sells some 10,000 birds a week. With more stores to be opened in the near future, his Val-Lo-Will Farms

Institute of American Poultry Industries, 110 N. Franklin St., Chicago, Ill.
(The U. S. Egg and Poultry Magazine, September, 1940)

will step up production to 15,000 birds a week in October, to 20,000 a week in January.

While retailers have been cutting up most of their own poultry either at a central cutting plant or in their stores, some of them question whether it is better to cut it themselves or to buy it disjointed from packers. A point worthy of their consideration in this connection is the possibility that the butcher's time could be used to better advantage in developing sales.

There are frequent lulls during the week when butchers have time to cut up the day's supply. There is little doubt that in such cases it is cheaper for the butcher to do his own cutting.

Packer's Opinions

Preparations for the week-end rush in stores handling a large volume, on the other hand, often necessitate payment of over-time to butchers who cut up poultry in the stores. The packer feels that, with lower labor costs in his country plants, he can do the job for these retailers cheaper than they can do it themselves.

Packers in general also feel that skilled operators, working with special equipment and under the most sanitary conditions in their eviscerating plants, can do a more efficient job for the dealer.

Although poultry packers regard the sale of chicken by the piece as still in the experimental stage, they are watching developments closely and experimenting with costs and sales with a view to packing quantities of cut-up chicken in the bulk for retailers.

Get Public's Reaction

Swift & Company started packing disjointed chicken in bulk about a month ago after asking their men in all parts of the country to get the public's reaction to this method of selling chicken. They have placed it in certain markets to experiment with prices and within the next 90 days expect to know just what people will pay for various pieces.

If the popularity of this type of merchandising continues—and they think it will, because of the increasing number of inquiries they are getting—Swift will undoubtedly pack a considerable quantity of cut-up poultry in bulk. They believe the new equipment they are installing in their eviscerating department at Clinton, Iowa, should step up production and lower their labor costs considerably.

Wants Cuts Standardized

Armour is making similar tests and is working out specifications for cutting and distribution. "There is no standardization of cuts at present," says Tracy Cowan, "and distribution of such a perishable product as fresh cut-up chicken may require special equipment. We want these things settled before we start packing."

Wilson's aren't packing it yet, according to C. L. Simmons, but they, too, are getting information on production and distribution costs with the expectation of going into it. "I think the idea is sound," he says, "and I see no reason why it should be confined to the smaller birds. I'd like to see it extended to turkeys."

"We're already in it," says Frank Priebe of Priebe & Sons, "because we think it offers the greatest opportunity for increased poultry sales of any idea that has hit the industry for years."

Everyone agrees that the use of undergrades would have a detrimental effect on cut-up chicken sales. The buying public could not be fooled long by inferior birds or by the substitution of roosters or stewers for fryers. Thus, the dealer must not only watch quality carefully, but he must also identify poultry with the purpose for which it is to be used.

That there will be abuses which can't be controlled, everyone admits. This means that the success of this method of marketing chicken depends almost entirely on the determination of both packers and retailers to promote quality and to play fair with the consumer all along the line.

How the sale of chicken by the piece will affect sales of packaged eviscerated chicken and roasting chickens is a question on which opinion is divided. The fact that this is the one type of merchandising which gives the consumer a choice of pieces is very much in its favor and leads many to think that cut-up chicken will take its toll of packaged poultry and roaster sales.

Others, however, believe that packaged chicken and roasters will hold their own—in one case because they think there will always be a market for complete chickens attractively boxed; in the other, because, in spite the extra convenience, cut-up chicken can never take the place of roasters for certain purposes.

The sale of cut-up chicken presents certain problems to both the packer and the dealer.

Distribution a Problem

The poultry packer's biggest problem is distribution. How will he get fresh cut-up chicken to the dealer in first-class condition? Should he sell the birds as units or by parts?

As he sees it, fresh cut-up poultry will have to be distributed from plants no more than an overnight jump from the point of sale, if it is to reach the retailer in good condition. Orders destined for greater distances will have to be hard frozen.

Packers also agree that, in the beginning at least, they must sell the birds as a unit if they are to keep all parts moving evenly. "We must learn to walk before we try to run," says Mr. Priebe. But he believes that later it may be possible to work out a practical plan for distributing choice cuts to one dealer, less desirable ones to another. Mr. Simmons, who is convinced the packer's business does not lend itself to this type of distribution, says: "The birds must be sold as units."

Must Move All Parts

The retailer's biggest problem is to keep all parts moving.

The chains have run into less trouble than they anticipated. National Tea thinks one of the reasons is that they have put cut-up poultry only in stores which draw their trade from all classes. But they all agree that proper pricing of the different parts is the most important factor in keeping the movement of all parts uniform.

But most of the small independent dealers doubt their ability to dispose of expensive cuts in poorer sections or cheaper cuts in well-to-do districts. According to John Kotal of The National Association of Retail Meat Dealers, this has been the biggest factor in keeping these retailers out of the field. They feel they can't handle cut-up chicken profitably unless they can buy from a distributor only those parts for which there is demand in their neighborhood.

Whatever problems the marketing may present at the moment, the general outlook is hopeful.

Already it has proved profitable for the dealer—not only by increasing poultry sales, but also by attracting new customers, many of whom have not confined their purchases to chicken. Jewel believes that in this way cut-up chicken was a big factor in boosting their overall market average for mid-August to a point exceeding their 1939 Thanksgiving average.

Cut-up poultry sold in bulk should be no less profitable for the packer. The impression is fairly general that everyone can make a reasonable profit on it if he concentrates on developing volume. And anyone who tries to make more per pound than he does on other kinds of poultry, will soon be brought in line by competition.

Expect Increase in All Sales

Uncertain as to how much they should pack to insure an adequate supply, packers who are putting up cut-up in bulk now and those who expect to within a short time, are watching sales carefully. If the demand continues at its present rate, there is no doubt they will have to hard freeze for storage a sizable quantity to carry them through until the next fryer season.

But even if the demand falls off somewhat after the first flush of enthusiasm has waned, the promotion of cut-up chicken is doing much to make the consumer more conscious of poultry and will help to increase future consumption of all poultry.

Molasses Bran Treatment

The report of Jalonen in the Aug. 3 issue of Feedstuffs to the effect that molasses bran was found unsatisfactory in the control of coccidiosis is not surprising if, as one would be led to believe from the report as published, molasses bran was the only diet supplied the birds during the test.

This, it has been my observation, has been the most confusing point about this whole molasses bran controversy. To begin with, the nutritive value of molasses bran alone is much too low to satisfy the dietary requirements of birds during any extended treatment. On the other hand, the 40 per cent milk control is a fairly well balanced diet. To feed molasses bran alone for any period of three days or longer would only result in disappointment.

For this reason, it is quite essential that molasses bran be used for not more than one half day for each of the three or four days of treatment. The balance of each day's feeding must, therefore, be supplemented by regular mash feeding. The preferred method of feeding is molasses bran in the morning, mash in the afternoon. When such a schedule is followed a satisfactory laxative condition is obtained without excessive flushing such as usually results from the 40 per cent milk control.

—Charles W. Peters, Feedstuffs, August 17, 1940.

New Outlets for Chicken

We were greatly surprised with the results in a product brought to our attention, Chef's Instant Consomme, a beef stock concentrate for flavoring and seasoning, converting an ordinary-tasting food into well-tasting morsels.

The company manufacturing this product is experimenting with a chicken concentrate to parallel the beef. This chicken concentrate, when marketed, should account for additional chicken consumption.

—Kathryn Bele Niles, U. S. Egg and Poultry Magazine, September, 1940.

¶¶ ROBERT FREDERICK says that pickles are a dainty dish for ducks, having fed tons of them on his duck farm, in Paulding county, Ohio. He added that he had actually fed started ducklings on shelled corn and pickles.

—The Farmers Guide, August 24, 1940.

VIEWS OF THE EDITORS

What Egg Grading Could Do

Federal-State agricultural statisticians have just announced that Iowa's 20,104,000 hens laid a billion and two-thirds eggs during the first six months of this year.

During 1939, according to the same records, a slightly smaller flock laid a grand total of 2,585,000,000 eggs.

It is a matter of simple arithmetic to discover that the addition of one cent to the price farmers received for each dozen of the eggs sold last year would have increased the farm income in 1939 by more than 2 million dollars, and that a cent a dozen more on the January-June crop in 1940 would have added $1,365,000 to its value to the producer.

Either figure suggests that farm organization leaders are conservative in their estimates that raising the price paid to the farmer by two cents a dozen would mean better than $3,000,000 a year more in the farmers' pockets.

This suggests also the merits of the effort by farm organizations, state college experts, and other directly interested groups, with the cooperation of the agricultural committee of the Des Moines Chamber of Commerce, to secure the benefits to the producer of that price increase.

One survey conducted in Des Moines for the Iowa Farm Bureau federation, chiefly to lay the groundwork for discussion of future possibilities, is believed already to have demonstrated the feasibility of inaugurating a standardized system of egg grading for this state, such as has gained federal recognition and is now in use in other states.

The preliminary survey in Des Moines disclosed that only seven per cent of the eggs sold in that city are graded as to freshness, size, color, and quality, but that 85 per cent of the housewives queried said they would be willing to pay "a little more" for graded eggs and 68 per cent of them said they would buy more eggs if they were graded as to freshness and quality.

When it is considered that Iowa is not only the biggest producer of eggs among all the states but is also the largest exporter of this product —63 per cent of the total crop moving out of the state to market— and that standardized grading would enhance the value of Iowa eggs outside as well as inside the state, the potential importance of such a campaign becomes very apparent.

—Rhode Island Red Journal, October, 1940.

Fine Appointment

The Poultry Industry of America, in selecting Homer I. Huntington for the position of General Manager of the newly-formed National Poultry and Egg Board, paid tribute not only to Mr. Huntington, but to New England.

As manager of the New England Fresh Egg Institute, he has, in the space of two years, made the institute an outstanding success, and by his tireless work made the consumers of the Northeast egg conscious. He goes to a wider field of endeavor and his experiences in this eastern area should be valuable to him and the industry as he undertakes the task of increasing the consumption of eggs and poultry products throughout the nation.

We of the Northeast appreciate what he has done here and know that success will follow his steps in this great enterprise, sponsored by the poultry interests of the nation.

—New England Homestead, October 5, 1940.

A Lesson from the Hoosiers!

Just as various kinds and shapes of clouds portend the pending weather conditions to weather forecasters, so do certain significant happenings forecast likely important developments within an industry. Something of far reaching influence has just happened in Indiana. It is of interest to poultrymen in every state of the Union.

A news release from Lafayette, Ind., home of that state's famous agricultural college and experiment station, Purdue University, states, "Plans to boost Indiana farmers' yearly cash income of $50,000,000 from poultry to $70,000,000 during the next decade were formulated today in the first meeting of a newly formed Indiana Poultry Research Advisory Council, held at Purdue University. The council, composed of a dozen members representing all segments of the Hoosier poultry industry, was appointed by Hobart Creighton, Warsaw poultryman and a member of the advisory committee of the Purdue Agricultural Experiment Station. The purpose of the council, it was explained, will be to plan ways and means of improving the Indiana poultry industry and to advise the Purdue Poultry Department in arranging an effective research and extension program. At today's meeting the council members reviewed the present Purdue poultry research and extension program being carried on under the general direction of Dr. J. Holmes Martin, recently named head of the Purdue Poultry Department. In addition, the council outlined project work in poultry nutrition, genetics, management, marketing, diseases, housing and incubation. Sitting with the council at today's meeting were various Purdue agricultural specialists and officials. . . ."

How can the Indiana poultry industry fail to go forward with such a cooperative program? Who, other than the poultry producers in a state, is better informed of the research and extension needed in certain phases of the poultry industry? Why shouldn't the men who support the state poultry work from their taxes be given a more audible voice in the way they would like to see such tax funds expended?

Such a cooperative arrangement obviously involves the proper regard for the functions of the two groups involved—the interest of the poultry industry on one side and the limiting factors in the agricultural college and experiment station on the other. A fine sense of balance is required of both groups – that the poultrymen after they have presented their problems will have proper respect for the judgment of men who are trained in research, teaching and extension, and, likewise, that the men on the college staff will maintain that degree of independence necessary to place the major emphasis where, in their judgment, it likely belongs. Through acquaintance with the individuals involved in the Indiana Poultry Research Advisory Council, I can say confidently that this Indiana arrangement holds every promise of demonstrating to the rest of the nation a cooperative arrangement which should be the ideal for every state.

—O. A. Hanke, Poultry Tribune, October, 1940.

Chicken for Everybody

A new development in the marketing of poultry is extending greatly the consumer demand for chicken. The city housewife now can buy her frying chicken already cut into pieces ready for the pan. If she is from the higher income group and can afford to buy all white meat, the groceryman can supply it. If cash for food is limited, the housewife can buy only dark meat and at a lower price. Bony pieces (backs, wings, necks, etc.) are available for low income families, who can either fry these inexpensive cuts, or make them into chicken pie fit for a king.

Like Jack Sprat and his wife, the high and low income groups are expected to "lick the platter clean" under this new development. To the poultryman it means a bigger volume of fryer sales, and a new method of meeting competition from other meats. The poultry business already is feeling this new impetus to consumption.

—The Southern Planter, October, 1940.

Working with Feed Men

During June, the Brockton (Mass.) Egg Auction held a significant meeting. The directors called in the feed dealers and feed company representatives to meet with them, just to become better acquainted and to understand their problems a little better.

The feed companies and their representatives have become one of the greatest influences for constructive work in the Poultry Industry today. Feed company representatives and feed dealers are some of the highest type men associated with our industry. Feed represents close to 60% of the cost of production of every dozen eggs. Naturally, the kind of advice they hand out and the quality of the feed they sell has a tremendous effect on the profits of every business-poultryman.

Like all human activities, the situation is not 100% perfect and there are places where the efficiency of the service might be improved on. How much better, then, to sit down and talk things over in a cooperative way, instead of standing off and complaining, or feeling that one or the other group is against you, when by getting together there is every chance that, through sympathy and understanding of each other's vital problems, some kind of more satisfactory arrangement can be arrived at.

At any rate, the Brockton meeting is refreshing and will probably be followed by other meetings of a similar nature there and elsewhere.

The same thing is happening on the distributing end of our products. Poultrymen are beginning to realize that they can get farther by sitting down with distributors (and perhaps consumers) and working out their problems in the spirit of mutual welfare, than to fight each other or raise some kind of a bogey-man to represent "those terrible distributors, consumers . . . or what have you."

This business of getting together is the spirit of a new day in producer-distributor-consumer relations. Organized groups of producers are in the best possible position to hurry along the development that should put more money into the producer's pockets.

—Poultry Item—August-September, 1940.

Colds

This is the time of year when colds are most prevalent. If one stops to think, the reason isn't hard to discover. The days are hot and the nights are cold. As the temperature lowers during the night, the birds work closer together. By the time morning comes they are usually roosting pretty much in a huddle. When the first peep of day shows in the east, they begin jumping down from the roost. Unless the poultryman has been thoughtful enough to close the back openings of the building, there is always a cold draft across the floor.

This is the place where the birds get the most extreme change in temperature. Jumping down from the nice warm place on the roost to this cold draft causes more colds among poultry than any other one thing.

The wise poultryman will close every opening on the back of his houses as soon as the birds are at roost in the evening, or, at least before the temperature changes around midnight.

—San Joaquin Valley Poultryman, August 20, 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens Per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	Aug. 1	Sept. 1	Aug. 1	Sept. 1	Aggregate Jan.-Sept.	Aug. 1	Sept. 1	Aggregate Jan.-Sept.
North Atl.									
1929-38 (Av.)	96.9	75.1	73.6	44.4	38.9	402	33.6	28.7	341
1939	98.4	73.3	70.7	46.3	41.8	431	34.2	29.5	360
1940	97.2	71.6	73.9	46.9	41.8	428	38.7	30.9	357
E. N. Cent.									
1929-38 (Av.)	108.8	79.5	77.7	39.4	35.4	368	31.6	27.8	346
1939	107.3	76.7	77.6	42.7	37.5	398	32.9	29.3	367
1940	110.8	79.4	79.1	42.7	37.4	390	34.0	29.8	370
W. N. Cent.									
1929-38 (Av.)	118.8	85.5	83.2	35.3	31.8	337	30.4	26.4	345
1939	113.1	81.7	80.5	39.1	35.6	374	31.9	28.6	367
1940	118.6	84.9	82.5	39.6	36.9	365	33.8	30.4	378
South Atl.									
1929-38 (Av.)	58.9	45.6	46.2	36.5	30.8	349	16.5	14.0	178
1939	59.9	44.0	46.5	38.8	34.1	379	16.8	15.4	191
1940	59.9	45.6	47.4	40.4	35.3	371	18.1	16.3	194
South Cent.									
1929-38 (Av.)	65.0	49.0	49.5	33.0	27.5	334	16.2	13.7	186
1939	63.6	49.0	50.8	35.1	30.8	360	17.2	15.3	201
1940	65.8	47.7	49.3	36.6	31.4	345	17.3	15.4	192
Western									
1929-38 (Av.)	73.2	59.3	58.8	43.9	38.9	400	26.4	23.0	260
1939	72.6	56.9	56.8	44.7	39.9	413	25.7	22.7	261
1940	73.7	56.4	57.5	44.4	39.2	415	25.1	22.7	264
United States									
1929-38 (Av.)	84.5	63.1	62.5	37.6	33.0	357	23.5	20.3	258
1939	82.8	61.3	62.1	40.4	36.0	386	24.4	21.7	274
1940	85.1	62.0	62.6	41.0	36.5	378	25.1	22.5	274

Egg production continued seasonally heavy during August. Farm production of eggs totaled 2,920 million, compared with 2,817 million a year ago,—an increase of about 4 per cent. Production during the month exceeded the 10-year (1929-38) average by about 5 per cent and was the largest August production since 1931. Production during August showed a seasonal decline of about 13 per cent below the July production of 3,373 million eggs. The aggregate total production of eggs for the eight months January to August, inclusive, was 30,127 million, or 83,686,000 cases, an increase of about 1 per cent over the production for the same months in 1939, and about 3 per cent over the 10-year average for those months. The gain in production over August 1939 was 9 per cent in the South Atlantic, and 5 per cent in the North Atlantic and West North Central States. Increases in the East North Central and Far Western areas were small, with no change in the South Central States.

The average rate of production per layer on hand during August was 11.84 eggs compared with 11.66 eggs in August of last year and the 10-year (1929-38) average of 11.13 eggs. The rate of lay this year was the second highest on record for August, the record high being 12.11 eggs in 1937.

The August rate was equal to or above that of last year in all geographic areas except the highly commercial area of the Western States where it was below the rate of August, 1939.

Compared with the 10-year August average, the rate was higher in all producing sections with the exception of the Western States where it was about 4 per cent below the average. The rate of lay shown by sample farm flocks on September 1 remained at a high seasonal level, being 1.4 per cent higher than last year, 11 per cent higher than the 10-year average for September 1, and the highest for that date in the 16-year record.

Farm flocks during August carried an average of 246,583,000 layers, which is about 2 per cent more than in August last year, but about 1 per cent less than the 10-year (1929-38) average. The seasonal decline in average number of layers on hand from January to August was about 26 per cent this year compared with about 25 per cent both in 1939 and for the 10-year average. The largest seasonal decrease took place during June, when the laying flock was culled more heavily than usual because of the very low level of egg prices. With the recent rising trend of egg prices the heavy marketing of hens stopped. Sample farm flock reports on September 1 showed a gain of about 1 per cent over numbers on August 1, this being about the same rate of gain as last year. In contrast, the 10-year average change during August shows a 1 per cent decrease.

—Comment from U. S. D. A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Checking of the upward price tendency in Eastern markets, which occurred shortly after the middle of September, followed relatively heavy market arrivals earlier. Receipts of eggs at the 4 markets in August were 3 per cent lighter than a year earlier, although weekly receipts during the latter part of that month began to exceed those of comparable periods of last year. Not only did this trend continue throughout September, but after the first week of the month, there was a pickup in the current arrivals. Though September receipts will not equal those of August, unless there is an unusually heavy movement during the last week of the month, the relationship to date with September 1939 is a percentage increase of about as much as the decrease was in August. Heavier receipts at terminal markets may reflect August production, which was 4 per cent larger than last year, official reports indicate. Receipts at country packing plants in the Central West have continued to show seasonal decreases each week since the latter part of August, but are still very much heavier than during the corresponding period of 1939. For the two weeks ending September 1, the increases over a year earlier exceeded 20 per cent.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Receipts of Eggs (Cases) at 4 Markets*

Geographic Section	August 1940	August 1939	August % change	Jan. to Aug., Inc., 1940	Jan. to Aug., Inc., 1939	Jan. to Aug., Inc., % change
New England	22,012	21,519	+ 2.3	317,171	252,586	+ 25.6
Middle Atlantic	132,277	143,090	– 7.6	1,584,337	1,479,713	+ 7.1
South Atlantic	13,506	14,120	– 4.3	212,721	223,832	– 5.0
East North Central	142,517	125,651	+ 13.4	2,446,442	2,271,612	+ 7.7
West North Central	500,515	524,661	– 4.6	6,334,925	6,439,377	– 1.6
South Central	1,069	414	+158.2	74,495	54,104	+ 37.7
Mountain	27,968	19,210	+ 45.6	280,808	205,490	+ 36.7
Pacific	23,900	45,336	– 47.3	311,750	226,122	+ 37.9
Miscellaneous	325	362	– 10.2	3,915	3,919	– 0.1
TOTAL	864,089	894,363	– 3.3	11,566,564	11,156,755	+ 3.7

Receipts of Dressed Poultry (Pounds) at 4 Markets*

Geographic Section	August 1940	August 1939	August % change	Jan. to Aug., Inc., 1940	Jan. to Aug., Inc., 1939	Jan. to Aug., Inc., % change
New England	2,033,688	1,078,238	+ 88.6	9,647,993	9,292,385	+ 3.8
Middle Atlantic	8,298,810	4,672,733	+ 77.6	34,340,387	29,022,579	+ 18.3
South Atlantic	3,165,017	1,655,476	+ 91.2	18,126,137	11,966,600	+ 51.5
East North Central	2,650,424	2,895,975	– 8.5	23,099,683	24,719,102	– 6.6
West North Central	14,373,867	12,763,038	+ 12.6	93,998,936	77,613,888	+ 21.1
South Central	1,250,920	941,865	+ 32.8	12,326,490	13,426,112	– 8.2
Mountain	291,580	392,856	– 25.8	3,443,999	2,769,473	+ 24.4
Pacific	292,877	871,963	– 66.4	10,089,334	5,692,256	+ 77.2
Miscellaneous	–	–	0	128,680	34,117	+277.2
TOTAL	32,357,183	25,272,144	+ 28.0	205,201,639	174,536,512	+ 17.6

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	1940	1939	% Change from Previous Week	% Change from Last Year
September 7	59	48,297	52,711	–2.55	– 8.37
September 14	60	49,411	54,471	+1.86	– 9.29
September 21	58	49,015	54,548	+1.31	–10.14
September 28	58	48,350	54,845	–1.82	–11.84

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs 1940	Cases of Eggs 1939	Cases of Eggs % Chg.	Pounds of Poultry (000 omitted) 1940	Pounds of Poultry (000 omitted) 1939	Pounds of Poultry (000 omitted) % Chg.	Pounds of Young Stock (000 omitted) 1940	Pounds of Young Stock (000 omitted) 1939	Pounds of Young Stock (000 omitted) % Chg.	Pounds of Fowl (000 omitted) 1940	Pounds of Fowl (000 omitted) 1939	Pounds of Fowl (000 omitted) % Chg.
Sept. 7	52,736	46,871	+12.51	4,978	3,412	+45.92	2,933	2,069	+41.74	1,902	1,239	+53.53
Sept. 14	52,617	43,745	+20.28	5,476	4,325	+26.61	3,373	2,652	+27.20	2,005	1,592	+25.97
Sept. 21	46,421	38,503	+20.56	5,814	5,879	– 1.11	3,602	3,645	– 1.17	2,117	2,134	– 0.79
Sept. 28	43,681	30,985	+40.97	5,822	6,719	–13.34	3,599	4,023	–10.54	2,141	2,600	–17.67

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
September 7	Not Available			
September 14	28	22,975	-7.49	+7.29
September 21	26	25,287	+2.18	+4.66
September 28	27	28,460	-3.39	+2.90

—Compiled from U. S. D. A. market reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration 1940	1939	1938	Avg. Egg Price per Doz. (Dollars) 1940	1939	1938	Avg. Feed Cost per 100 lbs. (Dollars) 1940	1939	1938
September 6	6.7	6.7	4.3	.278	.285	.35	1.85	1.91	1.52
September 13	6.4	6.4	4.5	.289	.308	.343	1.86	1.98	1.55
September 20	6.6	6.9	4.6	.281	.29	.333	1.86	2.00	1.55
September 27	7.0	7.9	4.7	.267	.248	.334	1.87	1.96	1.58

—Compiled by N. Y. State Dept. of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration 1940	1939	10-Yr. Avg. 1929-38	Price of Fresh Graded Firsts (Dollars) 1940	1939	Cost of Ration per 100 lbs. (Dollars) 1940	1939
September 7	6.14	7.08	5.79	.195	.17	1.198	.960
September 14	6.25	6.59	5.65	.193	.188	1.208	1.240
September 21	5.87	6.66	5.63	.201	.182	1.183	1.216
September 28	6.02	6.39	5.49	.200	.182	1.204	1.166

—Compiled from U. S. D. A. market reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Rations 1940	1939	1938	1937	1936	1935
August	6.94	6.47	5.63	7.76	6.88	5.60
January-August	9.08	7.50	7.55	9.54	7.44	7.11
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

September egg markets were generally steady to firm, the Agricultural Marketing Service reports, though an unsettled tone was evident about the middle of the month. Largest price advances in the East were for the better grades, which are becoming less plentiful as the season progresses. Higher wholesale prices have increased costs, and apparently this has tended to slow down retail trade somewhat; and spread between average and top quality eggs has widened. Prices declined on the Pacific Coast. Commercial stocks are smaller than a year ago, but total storage stocks are larger as current storage supplies include a sizable quantity owned by the Surplus Marketing Administration and State relief agencies.

In the New York market, Mixed Color Firsts advanced 2 cents during the first two weeks of the month, but later lost almost half of this gain. Nearby eggs of the higher qualities followed a slightly irregular trend part of the month, but on September 27 averaged 4 cents higher than at the close of August. During this same period, Pacific Coast eggs at New York varied considerably from day to day, with no net change. On the Pacific Coast, prices on practically all grades have declined. At San Francisco, U. S. Extras are 2 cents lower and U. S. Standards 1 cent lower than early in the month.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

1940 Egg Prices at New York City

Kind	Sept. 6	Sept. 13	Sept. 20	Sept. 27	Sept. 27, '39
Mixed Color Firsts	20¾	21½-21¾	21½-21¾	20¾	19
Nearby and Midwestern White Premium Marks	29½-32	31-33½	30-32½	32½-35	28½-31
Nearby and Midwestern White Specials	29	29-30½	29½	32	28
Pacific Coast Specials	35¾-36¼	36-36½	34-34½	35½-36	33-33½
Nearby and Midwestern Brown Exchange Specials	27	26½-27	25½-26	25½-26½	29

Mid-Month Farm Prices of Eggs Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	19.9	23.2	26.2	30.1	28.8
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4	16.4	17.2				

Eggs in Storage

Total U. S. storage stocks of eggs on September 1 were 7,238,000 cases, an increase over a year earlier of almost 10 per cent. Subtracting Surplus Marketing Administration and relief eggs from this total, however, shows that commercially owned stocks on September 1 were only 6,213,000 cases, which is approximately 400,000 cases less than total stocks on September 1, 1939. Last year, all the eggs belonged to commercial interests. In the 35 cities, where about 75 per cent of all U. S. stocks are stored, the reduction of egg stocks during the first 3 weeks of September was 635,000 cases, of which 91,000 cases were non-commercial, making a net commercial reduction of 544,000 cases. During the corresponding period of 1939, the total reduction (all commercial) in the 35 cities was 578,000 cases. The last report for the 35 cities (September 21) shows 4,975,000 cases, compared with 4,435,000 cases a year earlier, an increase of 12 per cent. At the beginning of the month, the increase over a year earlier was 11 per cent.

Storage stocks of frozen eggs in the U. S. on September 1 were 146 million pounds, an increase of 10 million pounds over September 1, 1939. The percentage rate of reduction in the 35 cities since September 1 has been about the same as that of last year, but since 1940 stocks are heavier than those of last year, the reduction in terms of volume is slightly greater this year.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Storage Holdings of Eggs

Kind	Sept. 1 5-Year Avg. 1935-39	Sept. 1 1939	Aug. 1 1940	Sept. 1 1940	% Change Sept. '39-Sept. 40
		(Thousands)			
Shell Eggs (cases)	7,062	6,598	7,784	7,238**	+9.7
Frozen Eggs (lbs.)	128,481	135,928	154,947	145,822	+7.2
Frozen Case Equivalent (cases)*	3,671	3,884	4,427	4,166	+7.2
Total (cases)	10,733	10,482	12,211	11,404	+8.7

* Frozen eggs are converted on the basis of 36 lbs. to the case.

** Includes 1,025,434 cases owned by the Surplus Marketing Administration for relief distribution.

Poultry Meat Prices

Mid-Month Farm Prices of Chickens Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	14.9	15.2	14.6	14.1	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3	13.6	13.4				

Receipts of live poultry at Central Western country packing plants still show weekly increases, both on fowl and young stock. The increase on the two classes combined during the week ending September 21 was 4.5

per cent. The slight decrease during this same week, as compared with a year earlier, is in sharp contrast to the year-to-year relationships during preceding weeks, for since the middle of May, with the exception of a period in July, weekly receipts at these packing plants have consistently exceeded those of corresponding weeks in 1939. The recent change to a decrease may or may not be particularly significant. Figures for the next few weeks will throw more light on this situation. It is noted, however, that about the middle of September last year there was a sharp pickup in receipts, and that condition would naturally influence the statistical comparisons made of the current season, and 1939.

Dressed poultry receipts at the 4 markets in August were 28 per cent larger than in August last year. The September increase, however, appears to be slightly less than this.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	Sept. 1 5-Year Avg. 1935-39	Sept. 1 1939	Aug. 1 1940	Sept. 1 1940	% Change Sept. '39-Sept. 40
		(Thousand Pounds)			
Broilers	9,501	8,835	6,290	6,227	– 29.6
Fryers	2,491	2,520	1,811	2,536	+ .7
Roasters	4,115	4,883	3,633	3,364	– 31.2
Fowls	10,073	12,276	18,312	19,822	+ 61.4
Turkeys	9,002	9,994	29,497	21,116	+111.2
Ducks	8,228	10,339	8,262	11,015	+ 6.5
Miscellaneous	12,979	14,023	11,817	12,325	– 12.2
Unclassified			2,793	5,732	
Total	56,389	62,870	82,415	82,137	+ 30.6

Storage stocks of frozen poultry on September 1 were 82 million pounds. an increase of 20 million pounds over a year earlier. Of this increase, 11 million pounds were turkeys. The net change in frozen poultry stocks in September is an increase, stocks in the 35 cities having increased from 64,682,000 pounds on August 31, to 67,250,000 pounds on September 21. Last year during the corresponding period there was a reduction of approximately 1¾ million pounds. The low point last season was reached at the latter date. Lowest holdings in the 35 cities during the current season occurred the last week in July. From that time until the first of September stocks fluctuated up and down, but each week since September 21 there have been increases.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs set During August			Salable Chicks Hatched During July			Chicks booked Sept. 1 for Sept. or later delivery			
		1939	1940	% chg.	1939	1940	% chg.	No. of Plants	1939	1940	% chg.
		Thousands			Thousands				Thousands		
N. Eng.	15	1,523	930	–39	934	671	–28	6	1,509	1,078	–28
Mid. Atl.	9	526	499	– 5	300	313	+ 4	4	210	160	–24
S. Atl.	21	791	678	–14	495	449	– 9	9	633	723	+14
E. N. Cent.	30	912	930	+ 2	565	611	+ 8	9	213	400	+88
W. N. Cent.	8	408	227	–44	202	110	–46	4	17	6	–65
S. Cent.	12	262	291	+11	140	146	+ 4	3	32	24	–25
West	27	992	854	–14	481	443	– 8	13	425	411	– 3
U. S.	122	5,414	4,409	–19	3,117	2,743	–12	48	3,039	2,802	– 8

Production of hatchery chicks during August was 12 per cent smaller than August output last year. Reports from 122 commercial hatcheries having a combined capacity of 21,936,000 eggs, showed a production of 2,743,000 chicks during August compared with 3,117,000 chicks a year earlier. Hatcheries reporting for the first 8 months of 1940 showed a combined output of 93,797,000 chicks compared with 105,475,000 chicks during the same period last year—a decrease of 11 per cent.

An increase of 8 per cent was reported for the East North Central States, however, and 4 per cent for both the North Atlantic and South Central States. These regions are important broiler-producing areas, and a somewhat better demand this year than last for chicks for broiler production kept the output of many plants above the level of a year earlier. But smaller output in some areas more than offset these increases and ranges from a decline of 8 per cent in the Western States to 46 per cent in the West North Central States.

Most of the summer-hatched chicks are used for broiler production, and the changes in the rate of hatchery output are sometimes sharply influenced by changes in prices for live broilers. The effects of such changes regionally, however, are subject to considerable variation. A weakening of broiler prices in late July undoubtedly caused an immediate falling off in the demand for hatchery chicks in the broiler-producing areas of New England and South Atlantic States, while in similar areas in other regions, the response was somewhat delayed because of local conditions. Broiler prices, however, began to pick up during the latter part of August and are again at a point to encourage the production of hatchery chicks. If continued, this will probably cause a fairly good demand during the next few months.

The consumption of poultry during the last several months has been at an extremely high level. Receipts of dressed poultry during August at New York, Chicago, Philadelphia, and Boston, were of record proportions, but trade output figures indicates that the consumption of poultry was also of record proportions. Aggressive efforts to reduce the large stocks of turkeys still in storage on August 1 may have had something to do with both the increase in receipts and consumption. Likewise, the marketing and distribution of a large number of early matured turkeys tended to swell the August receipts and August consumption. Regardless of the cause, the poultry markets by the end of August had developed a decidedly more healthful tone and this is expected to bring about some improvement in the demand for hatchery chicks between now and the end of the year.

Egg markets also strengthened during late August and early September. The feed-egg ratio, which six weeks ago was less favorable to producers than a year earlier, is now more favorable on the same comparative basis. In July, it required 7½ dozen eggs to buy 100 pounds of feed, on the basis of Chicago prices for both eggs and feed, while at the present time it requires only about 6 dozen to buy the same quantity of feed.

—Comment from U. S. D. A. Poultry and Egg Production Report.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity	August 1940	August 1939	Jan. to Aug., Inc. 1940	Jan. to Aug., Inc. 1939
Eggs in shell (doz.)	333,595	209,270	3,366,154	1,647,085
Eggs and Yolks, frozen, dried or canned (lbs.)	14,110	Not available	113,004	Not available
Live Poultry (lbs.)	5,842	13,238	82,053	136,424
Dressed Poultry (lbs.)	158,070	331,068	1,001,012	1,744,180

Imports of Eggs and Poultry

Eggs in shell (doz.)	16,001	21,447	141,689	204,894
Whole Eggs, dried (lbs.)	0	0	29,250	35,500
Whole Eggs, frozen (lbs.)	0	0	167	420
Yolks, dried (lbs.)	163,950	100,400	1,347,765	305,725
Yolks, Frozen (lbs.)	0	0	0	25,330
Egg Albumen, dried (lbs.)	33,400	9,000	216,600	337,283
Egg Albumen, frozen (lbs.)	0	0	0	0
Live Poultry (lbs.)	157,492	45,091	914,927	491,500
Dressed Poultry (lbs.)	10,214	6,278	302,783	125,478
Poultry, prepared (lbs.)	3,083	12,001	227,675	600,196

Egg Breaking Operations

Egg Breaking Operations During August, 1940

Commodity		Quantities reported to date for Aug. 1940	Same Firm Comparison		
			Aug. 1939	Aug. 1940	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		1,537,251	1,426,807	1,537,251	+ 8
Mixed eggs (plain)		364,539	189,039	364,539	+ 93
Mixed eggs (emulsions, also with sugar, salt, etc.)		64,125	46,150	64,125	+ 39
Egg whites (all descriptions)		875,901	1,199,593	875,901	– 27
Egg yolks packed	Without salt, sugar, etc.	243,221	650,483	243,221	– 63
	With sugar	156,364	227,286	156,364	– 31
	With salt	400,000	200,000	400,000	+100
	All yolk emulsions, including glycerine	0	0	0	
Total—pounds		3,641,401	3,939,358	3,641,401	– 8
Total—case egg equivalent		104,040	112,553	104,040	
Number of firms reporting*		39	39		

* Firms, not plants. Some firms operate more than one plant.

Oats As Turkey Feed

Oats should be more widely recognized in America as turkey feed, says P. H. Margolf, poultryman of the Pennsylvania State College.

In his experiments, all of the turkeys received starter mash for the first 9 weeks. Then developer mash was fed and when the birds were 15 weeks old scratch grain was added. When the poults were 4 weeks of age, half of the poults were given whole oats. All feeds were hopper-fed. About 275 birds were brooded in confinement. Of these one-third continued in confinement until mature and the others were given range.

The whole oats consumed by the group receiving oats and reared on range amounted to 41 per cent of their total feed intake. From 15 to 18 per cent less mash was consumed when whole oats were supplied. From these results, it appears that 1,200 pounds of mash may be replaced by 1,200 pounds of whole oats for every 100 turkeys raised on range, Margolf commented. Whole oats may be substituted now for part of the feed of half-grown turkeys. In order to avoid digestive disturbances, it might be well to limit the amount of whole oats allowed for a few days until the birds become accustomed to the change in their ration.

—Poultry Item, October, 1940.

RESULTS OF LAYING TESTS

J. A. Hanson's White Leghorns are not slackening their pace, even though they do have a lead of some 340 points over the second best pen to September 1. These top-notchers at the Storrs Test piled up a total of 372.65 points during August to lead all standard test pens. There is little doubt that they have the championship for the 1939-40 trial run all sewed up.

Second best pen to date belongs to the same breeder and is entered at the same test. Third best is the Wm. L. Gilbert Home's Leghorns at Storrs. Erath's Leghorns at Texas rate fourth, with the Horseshoe Leghorns fifth.

Parmenter's birds at Rhode Island and Hardin's team at Georgia are fighting it out for the blue ribbon in the Rhode Island Red class. Some 32 points separated these pens on September 1.

It's a nip and tuck battle being waged between Mettler's Pennsylvania entry and Joachim Farm's Storrs pen for the top award in the New Hampshire division. Anything can happen in this class during the last three weeks of this year's run.

Amidon has a fairly strong grip on first place in the Barred Rock section, but Cobb's entry still is very much in the running. Among White Rocks, Riley Poultry Farm has practically settled the issue.

Parmenter's Rhode Island Red hen at the Rhode Island Test leads all individual hens in points to September 1.

Twenty Highest Pens in All Breeds to September 1

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3819	4040.20	Storrs
J. A. Hanson	White Leghorn	3482	3700.40	Storrs
Wm. L. Gilbert Home	White Leghorn	3473	3677.60	Storrs
Erath Egg Farm	White Leghorn	3447	3657.65	Texas
Horseshoe Poultry Ranch	White Leghorn	3518	3626.25	Texas
E. B. Parmenter	Rhode Island Red	3300	3584.25	Rhode Island
H. J. Hardin	Rhode Island Red	3343	3552.00	Georgia
Norman W. Amidon	Barred Rock	3406	3532.55	Pennsylvania
Thomas Mettler	Rhode Island Red	3330	3487.05	Hunterdon, N. J.
Alampi Poultry Breed. Farm	Rhode Island Red	3248	3485.25	Passaic, N. J.
To-Lani Farm	Rhode Island Red	3454	3483.00	Georgia
Ralph W. Anderson	Rhode Island Red	3278	3480.50	Storrs
George M. Heberer	White Leghorn	3328	3469.00	Texas
R. C. Cobb	Barred Rock	3339	3467.25	Storrs
A. E. Guinn	White Leghorn	3404	3457.35	Georgia
Kauder's Pedigreed Leghorns	White Leghorn	3213	3419.90	Storrs
Thomas Mettler	Rhode Island Red	3254	3417.00	Passaic, N. J.
George A. Pearce	White Leghorn	3229	3414.10	Hunterdon, N. J.
Kauder's Pedigreed Leghorns	White Leghorn	3197	3407.50	Storrs
Guy A. Leader	White Leghorn	3248	3405.85	Storrs

High Pen in Each Standard Test to September 1—(336 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3819	4040.20	Storrs
Erath Egg Farm	White Leghorn	3447	3657.65	Texas
E. B. Parmenter	Rhode Island Red	3300	3584.25	Rhode Island
H. J. Hardin	Rhode Island Red	3343	3552.00	Georgia
Norman Amidon	Barred Rock	3406	3532.55	Pennsylvania
Thomas Mettler	Rhode Island Red	3330	3487.05	Hunterdon, N. J.
Alampi Poultry Breed. Farm	Rhode Island Red	3248	3485.25	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	3153	3395.85	New York State
W. C. Eckard	White Leghorn	3151	3364.05	Michigan
Ford's Riverbank Farm	Rhode Island Red	3235	3361.25	Maine
A. E. Danish	White Leghorn	3178	3321.45	Central New York
E. B. Parmenter	Rhode Island Red	3151	3319.55	Western New York
Becker's Ravenswood L. Fm.	White Leghorn	3003	3209.40	Florida
Lindstrom Poultry Farm	White Leghorn	3028	3193.05	Oklahoma
J. J. Warren	Rhode Island Red	2853	3114.10	Missouri
W. A. Seidel	White Leghorn	2923	3071.90	Arizona.

High Pen in Each Standard Test for August

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	342	372.65	Storrs
A. E. Danish	White Leghorn	300	323.90	Central New York
A. E. Guinn	White Leghorn	302	315.80	Georgia
Beech Bend Farm	White Leghorn	295	315.80	Western New York
Erath Egg Farm	White Leghorn	297	314.65	Texas
P. S. Dickey	White Leghorn	304	310.80	Arizona
Rinker Poultry Farm	White Leghorn	285	303.30	Pennsylvania
C. A. Richardson	New Hampshire	278	301.60	New York State
Lone Oak Leghorn Farm	White Leghorn	283	292.60	Florida
Creighton Brothers	White Leghorn	271	292.25	Rhode Island
Thomas Mettler	White Leghorn	268	289.50	Hunterdon, N. J.
John J. Coleman	White Leghorn	268	289.35	Passaic, N. J.
Miami Chick Hatchery	White Leghorn	266	289.00	Michigan
Lindstrom Poultry Farm	White Leghorn	269	287.95	Oklahoma
Foster Jameson	Barred Rocks	262	278.25	Maine
Hill Hatchery	White Leghorn	257	276.90	Missouri

High Pen in Each Breed to September 1—(336 Days)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	3819	4040.20	Storrs
E. B. Parmenter	Rhode Island Red	3300	3584.25	Rhode Island
Norman Amidon	Barred Rock	3406	3532.55	Pennsylvania
Thomas Mettler	New Hampshire	3254	3353.45	Pennsylvania
Riley Poultry Farm	White Rock	2998	3120.75	Oklahoma
Harvey E. Taylor	White Wyandotte	3061	3095.05	Texas
Raymond S. Thomas	Ancona	2743	2757.45	Pennsylvania
Laclede Hatchery	Black Australorp	2592	2568.90	Oklahoma
E. J. Covey	Black Minorca	2306	2396.10	Texas
T. D. Brown	White Minorca	2183	2289.70	Texas
Raymond Murphy	White Giant	2080	2202.55	Missouri
Lindstrom Poultry Farm	Buff Minorca	2097	2020.45	Texas
Harry L. Phillips	Columbian Rock	1870	1997.90	Missouri
Charles C. Ward	Buff Leghorn	1829	1833.65	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	2126	1830.20	Florida
Famous Poultry Farms	Leghorn Cross	1790	1792.30	Georgia
S. E. Raymond	Lamona	1655	1761.05	Storrs
Iowa Master Breeders	Buff Orpington	1631	1731.45	Missouri
R. L. Jones	Light Brahma	1320	1395.60	Hunterdon, N. J.
Walter Dobe	Barnevelder	1139	1209.70	Western New York
Daniel S. Riker	Buff Rock	457	420.00	Maine

High Hen in Each Breed to September 1—(336 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	323	350.80	Rhode Island
J. A. Hanson	White Leghorn	323	346.95	Storrs
George A. Pearce	New Hampshire	299	325.20	Passaic, N. J.
Norman W. Amidon	Barred Rock	299	314.70	Pennsylvania
Earl C. Dunham	White Rock	288	313.05	Georgia
T. D. Brown	White Minorca	285	311.60	Texas
Harvey E. Taylor	White Wyandotte	283	291.90	Texas
Norman Stansfield	Black Australorp	243	264.95	Rhode Island
Raymond S. Taylor	Ancona	246	259.75	Pennsylvania
Iowa Master Breeders	Buff Orpington	230	248.20	Missouri
Hillview Poultry Farm	White Giant	237	246.55	Texas
Famous Poultry Farms	Leghorn Cross	242	246.30	Georgia
E. J. Covey	Black Minorca	227	236.75	Texas
Harry L. Phillips	Columbian Rock	214	232.60	Missouri
R. L. Jones	Light Brahma	208	222.45	Hunterdon, N. J.
S. E. Raymond	Lamona	200	219.45	Storrs
Lindstrom Poultry Farm	Buff Minorca	191	205.55	Missouri
Chas. C. Ward	Buff Leghorn	190	196.90	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	220	192.70	Florida
Daniel S. Riker	Buff Rock	121	128.10	Maine

High Hen in Each Standard Test to September 1—(336 Days)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	323	350.80	Rhode Island
J. A. Hanson	White Leghorn	323	346.95	Storrs
W. A. Seidel	White Leghorn	324	344.35	Texas
H. J. Hardin	Rhode Island Red	317	342.45	Georgia
Booth Farms and Hatchery	White Leghorn	317	341.40	Florida
George A. Pearce	Rhode Island Red	316	341.15	Passaic, N. J.
Thomas Mettler	Rhode Island Red	315	338.75	Hunterdon, N. J.
Ford's Riverbank Farm	Rhode Island Red	303	329.85	Missouri
J. O. Coombs & Son	White Leghorn	304	329.60	Oklahoma
H. Guy Loose	White Leghorn	300	328.70	Pennsylvania
J. A. Hanson	White Leghorn	304	321.15	Western New York
Redbird Farm	Rhode Island Red	292	316.75	New York State
Nelson's Leghorn Breed. Farm	White Leghorn	296	315.20	Arizona
Riley Poultry Farm	White Leghorn	294	312.50	Michigan
Holser's Valley Farm	White Leghorn	289	310.90	Central New York
E. B. Parmenter	Rhode Island Red	278	304.85	Maine

High Hen in Each Standard Test for August

Owner	Breed	Eggs	Points	Test
Plainview Poultry Farm	White Leghorn	31	34.10	Maine
Riley Poultry Farm	Barred Rock	31	34.10	Central New York
Lux Leghorn Land	White Leghorn	31	34.10	Missouri
Dryden Poultry Breeding Farm	White Leghorn	31	33.20	Michigan
J. A. Hanson	White Leghorn	30	33.00	Storrs
Thomas Mettler	Rhode Island Red	30	32.95	Hunterdon, N. J.
Redbird Farm	Rhode Island Red	30	32.90	New York State
Creighton Brothers	White Leghorn	30	32.90	Western New York
C. B. Davidsen	White Leghorn	30	32.85	Georgia
G. Clifford Butterworth	Rhode Island Red	30	32.85	Rhode Island
George M. Heberer	White Leghorn	31	32.65	Texas
George A. Pearce	Rhode Island Red	30	32.45	Passaic, N. J.
Booth Farms and Hatchrey	White Leghorn	29	31.05	Florida
Rowley Poultry Farm	White Leghorn	28	30.75	Pennsylvania
J. O. Coombs and Son	White Leghorn	28	30.75	Oklahoma
W. A. Seidel	White Leghorn	28	30.70	Arizona

Twenty Highest White Leghorn Pens in Country to September 1

Owner	Eggs	Points	Test
J. A. Hanson	3819	4040.20	Stors
J. A. Hanson	3482	3700.40	Storrs
Wm. L. Gilbert Home	3473	3677.60	Storrs
Erath Egg Farm	3447	3657.65	Texas
Horseshoe Poultry Ranch	3518	3626.25	Texas
George M. Heberer	3328	3469.00	Texas
A. E. Guinn	3404	3457.35	Georgia
Kauder's Pedigreed Leghorns	3213	3419.90	Storrs
George A. Pearce	3229	3414.10	Hunterdon, N. J.
Kauder's Pedigreed Leghorns	3197	3407.50	Storrs
Guy A. Leader	3248	3405.85	Storrs
J. A. Hanson	3312	3400.20	Passaic, N. J.
Piho Brothers	3185	3372.55	Storrs
W. C. Eckard	3151	3364.05	Michigan
Sand Springs Home Farm	3327	3355.10	Texas
I. Commer	3313	3348.85	Texas
A. E. Danish	3178	3321.45	Central New York
Alfred MacMillan	3100	3312.70	Texas
Rochelle Egg Farm and Hatchery	3297	3311.90	Texas
John A. Clear	3177	3309.05	Hunterdon, N. J.

Twenty Highest Rhode Island Red Pens in Country to September 1

Owner	Eggs	Points	Test
E. B. Parmenter	3300	3584.25	Rhode Island
H. J. Hardin	3343	3552.00	Georgia
Thomas Mettler	3330	3487.05	Hunterdon, N. J.
Alampi Poultry Breeding Farm	3248	3485.25	Passaic, N. J.
To-Lani Farm	3454	3483.00	Georgia
Ralph W. Anderson	3278	3480.50	Storrs
Thomas Mettler	3254	3417.00	Passaic, N. J.
E. B. Parmenter	3153	3395.85	New York State
Ford's Riverbank Farm	3235	3361.25	Maine
Alampi Poultry Breeding Farm	3285	3360.50	Passaic, N. J.
E. B. Parmenter	3151	3319.55	Western New York
W. C. Mullins	3140	3318.90	Texas
Crooks Farm	3109	3306.00	Storrs
E. B. Parmenter	3091	3300.35	Storrs
Norman W. Amidon	3039	3293.15	Storrs
J. J. Warren	3098	3286.85	Texas
Norman W. Amidon	3104	3282.90	Storrs
Walter H. Rogler	3089	3274.90	Storrs
J. J. Warren	3105	3268.65	Storrs
W. H. Wilson	3316	3261.80	Georgia

Twenty Highest New Hampshire Pens in Country to September 1

Owner	Eggs	Points	Test
Thomas Mettler	3254	3353.45	Pennsylvania
Joachim Breeding Farm	3089	3350.85	Storrs
Eben Wood	2991	3252.50	Storrs
Joachim Breeding Farm	3059	3237.70	Pennsylvania
George A. Pearce	3168	3210.45	Passaic, N. J.
Wene Chick Farm	2963	3193.15	Storrs
Lamar W. Sexton	3050	3170.20	Hunterdon, N. J.
James H. Horne	2917	3117.20	Storrs
Eben Wood	2871	3106.25	Rhode Island
Pine Top Poultry Farm	2761	3001.05	Storrs
Triple Pine-Tested Quality	2954	2996.05	Western New York
Floyd H. Moore	2853	2978.85	Pennsylvania
Kauder's Pedigreed Hampshires	2750	2968.05	Georgia
Fuzzydele Farms	2757	2958.80	Pennsylvania
Schwegler's Hatchery	2898	2928.60	Western New York
Hank's Hennery	2802	2910.65	Storrs
Hubbard Farms	2757	2902.95	Storrs
Ives Dale Farm	2852	2854.20	Western New York
Thomas J. Harrold	2749	2826.90	Georgia
Broad Acres Farm	2776	2822.55	Storrs

Twenty Highest Barred Plymouth Rock Pens in Country to September 1

Owner	Eggs	Points	Test
Norman W. Amidon	3406	3532.55	Pennsylvania
R. C. Cobb	3339	3467.25	Storrs
Dryden Poultry Breeding Farm	3129	3181.70	Storrs
Riley Poultry Farm	3193	3166.30	Texas
J. W. Schaible	3066	3067.00	Hunterdon, N. J.
P. N. Hibbard	2886	2967.25	Storrs
R. C. E. Wallace	2929	2964.55	Florida
Stuart W. Smith	2894	2951.70	Storrs
Booth Farms and Hatchery	2783	2925.10	Oklahoma
Schwegler's Hatchery	2857	2923.65	Central New York
Fuzzydele Farms	2850	2919.00	Storrs
Broad Acres Farm	2852	2866.00	Storrs
Foster Jameson	2723	2862.15	Maine
Riley Poultry Farm	2735	2858.15	Michigan
Booth Farms and Hatchery	2734	2850.15	Florida
Booth Farms and Hatchery	2645	2826.00	Missouri
E. B. Parmenter	2689	2816.70	Pennsylvania
R. R. Parks	2762	2786.70	Pennsylvania
David T. Cohen	2685	2783.85	Michigan
Riley Poultry Farm	2688	2756.65	Georgia

Twenty Highest White Plymouth Rock Pens in Country to September 1

Owner	Eggs	Points	Test
Riley Poultry Farm	2998	3120.75	Oklahoma
Homestead Farm	3014	2875.50	Pennsylvania
Kalerok Farm	2653	2848.00	Rhode Island
John Spangenberg	2745	2841.70	Storrs
Riley Poultry Farm	2798	2814.90	Storrs
Four Winds Farm	2752	2785.65	Michigan
E. A. Hirt	2623	2764.70	Storrs
Belcarihill Farms	2725	2762.25	Storrs
Booth Farms and Hatchery	2577	2733.00	Missouri
Booth Farms and Hatchery	2662	2713.95	Texas
F. L. Woodworth	2521	2683.25	Michigan
John Spangenberg	2564	2670.70	Maine
Philip S. Davis	2538	2651.50	Central New York
Townsley Trapnest Farm	2559	2651.05	Georgia
Drumm Egg Farm	2543	2631.00	Georgia
Riley Poultry Farm	2773	2622.80	Georgia
G. A. Robertson and Son	2381	2591.40	Central New York
E. A. Hirt	2445	2588.75	Rhode Island
Belcarihill Farms	2543	2581.10	Pennsylvania
Clyde Cochran	2530	2556.55	Oklahoma

Average Production in Each Test to September 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for Aug.	Per Cent Mortality to Sept. 1
Storrs	1,300	205.20	214.02	25.03	1.61	15.23
Texas	1,456	194.45	199.79	24.64	2.60	20.67
Passaic, N. J.	1,144	193.09	199.68	24.81	1.92	17.30
Western New York	884	180.23	198.66	24.93	2.14	14.25
Pennsylvania	1,066	193.06	198.36	24.64	2.25	20.35
Oklahoma	650	190.93	196.87	24.74	1.38	16.61
Georgia	1,352	191.51	196.09	24.52	2.81	21.37
Hunterdon, N. J.	650	186.98	194.07	24.88	1.84	18.15
Michigan	741	184.72	191.46	24.86	3.10	20.64
Florida	1,248	185.30	189.46	24.52	1.76	18.42
Central New York	910	178.27	186.65	25.12	1.75	16.59
Rhode Island	650	172.28	181.60	25.29	.46	21.53
New York State	1,092	175.46	180.67	24.69	2.10	15.56
Arizona	390	180.35	180.66	24.02	2.56	22.82
Missouri	780	161.96	172.53	25.56	1.02	21.41
Maine	1,027	167.26	170.67	24.48	2.53	20.93
All Tests	15,340	185.26	191.50	24.79	2.04	18.70

High Pen, Each Breed, in Illinois Non-Standard Test to September 1

Owner	Breed	Eggs	Points
E. T. Herstein	White Leghorn	2012	2077.15
Mapleside Poultry Farm	Barred Rock	2054	2039.55
F. S. Tarbill	Rhode Island Red	1792	1842.20
Berry-Ajax Hatchery	Black Australorp	1707	1776.80
Belldear Hatchery	White Wyandotte	1662	1723.20
John Pfeifer	New Hampshire	1389	1514.55
Illinois Hatchery	White Rock	1450	1508.20
Wallace Moody	Buff Rock	1054	1085.85

Five High Pens, R.O.P., Progeny Test, Paterson, N. J., to September 1

Owner	Breed	Eggs	Points
J. J. Warren	Rhode Island Red	3657	3756
E. B. Parmenter	Rhode Island Red	3560	3679
W. B. Coles	White Leghorn	3351	3418
Dembro Poultry Farm	White Leghorn	3175	3369
Crooks Farm	Rhode Island Red	3122	3250

High Pen, Each Breed, in Vineland, N. J., Hen Test to September 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	2093	2261	Two-Year
E. B. Parmenter	Rhode Island Red	1895	2042	Two-Year
Schwegler's Hatchery	Barred Rock	1784	1908	Two-Year
Albert Lawton	White Rock	1426	1538	Two-Year
Pine Top Poultry Farm	New Hampshire	888	969	Two-Year
Sebold Poultry Farm	White Leghorn	1606	1671	Three-Year
J. J. Warren	Rhode Island Red	1167	1262	Three-Year
Nedlar Farm	New Hampshire	924	988	Three-Year
Treiber Poultry Farm	White Leghorn	1728	1852	Mixed-Age
Schwegler's Hatchery	White Wyandotte	1692	1813	Mixed-Age
Kerr Chickeries	Barred Rock	1589	1700	Mixed-Age
Schwegler's Hatchery	White Rock	1436	1521	Mixed-Age
Wene Chick Farm	New Hampshire	1275	1364	Mixed-Age
Kerr Chickeries	Rhode Island Red	1114	1209	Mixed-Age

High Pen, Each Breed, in Vineland Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5887	6363	Two-Year
E. B. Parmenter	Rhode Island Red		5898	Two-Year
Schwegler's Hatchery	Barred Rock	5093	5347	Two-Year
Albert Lawton	White Rock	4419	4696	Two-Year
Pine Top Poultry Farm	New Hampshire	3665	3958	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	7442	7996	Three-Year
J. J. Warren	Rhode Island Red	7073	7619	Three-Year
Nedlar Farm	New Hampshire	5579	6094	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test to September 1

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	2552	2780.35	Two-Year
E. B. Parmenter	Barred Rock	2342	2562.35	Two-Year
Fuzzydele Farms	New Hampshire	1923	2104.35	Two-Year
J. J. Warren	Rhode Island Red	1906	2075.00	Two-Year
Lindstrom Poultry Farm	White Wyandotte	1879	2044.85	Two-Year
Fuzzydele Farms	White Leghorn	1955	2136.60	Mixed-Age

Twenty Highest Barred Plymouth Rock Pens in Country to September 1

Owner	Eggs	Points	Test
Norman W. Amidon	3406	3532.55	Pennsylvania
R. C. Cobb	3339	3467.25	Storrs
Dryden Poultry Breeding Farm	3129	3181.70	Storrs
Riley Poultry Farm	3193	3166.30	Texas
J. W. Schaible	3066	3067.00	Hunterdon, N. J.
P. N. Hibbard	2886	2967.25	Storrs
R. C. E. Wallace	2929	2964.55	Florida
Stuart W. Smith	2894	2951.70	Storrs
Booth Farms and Hatchery	2783	2925.10	Oklahoma
Schwegler's Hatchery	2857	2923.65	Central New York
Fuzzydele Farms	2850	2919.00	Storrs
Broad Acres Farm	2852	2866.00	Storrs
Foster Jameson	2723	2862.15	Maine
Riley Poultry Farm	2735	2858.15	Michigan
Booth Farms and Hatchery	2734	2850.15	Florida
Booth Farms and Hatchery	2645	2826.00	Missouri
E. B. Parmenter	2689	2816.70	Pennsylvania
R. R. Parks	2762	2786.70	Pennsylvania
David T. Cohen	2685	2783.85	Michigan
Riley Poultry Farm	2688	2756.65	Georgia

Twenty Highest White Plymouth Rock Pens in Country to September 1

Owner	Eggs	Points	Test
Riley Poultry Farm	2998	3120.75	Oklahoma
Homestead Farm	3014	2875.50	Pennsylvania
Kalerok Farm	2653	2848.00	Rhode Island
John Spangenberg	2745	2841.70	Storrs
Riley Poultry Farm	2798	2814.90	Storrs
Four Winds Farm	2752	2785.65	Michigan
E. A. Hirt	2623	2764.70	Storrs
Belcarihill Farms	2725	2762.25	Storrs
Booth Farms and Hatchery	2577	2733.00	Missouri
Booth Farms and Hatchery	2662	2713.95	Texas
F. L. Woodworth	2521	2683.25	Michigan
John Spangenberg	2564	2670.70	Maine
Philip S. Davis	2538	2651.50	Central New York
Townsley Trapnest Farm	2559	2651.05	Georgia
Drumm Egg Farm	2543	2631.00	Georgia
Riley Poultry Farm	2773	2622.80	Georgia
G. A. Robertson and Son	2381	2591.40	Central New York
E. A. Hirt	2445	2588.75	Rhode Island
Belcarihill Farms	2543	2581.10	Pennsylvania
Clyde Cochran	2530	2556.55	Oklahoma

Average Production in Each Test to September 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for Aug.	Per Cent Mortality to Sept. 1
Storrs	1,300	205.20	214.02	25.03	1.61	15.23
Texas	1,456	194.45	199.79	24.64	2.60	20.67
Passaic, N. J.	1,144	193.09	199.68	24.81	1.92	17.30
Western New York	884	180.23	198.66	24.93	2.14	14.25
Pennsylvania	1,066	193.06	198.36	24.64	2.25	20.35
Oklahoma	650	190.93	196.87	24.74	1.38	16.61
Georgia	1,352	191.51	196.09	24.52	2.81	21.37
Hunterdon, N. J.	650	186.98	194.07	24.88	1.84	18.15
Michigan	741	184.72	191.46	24.86	3.10	20.61
Florida	1,248	185.30	189.46	24.52	1.76	18.42
Central New York	910	178.27	186.65	25.12	1.75	16.59
Rhode Island	650	172.28	181.60	25.29	.46	21.53
New York State	1,092	175.46	180.67	24.69	2.10	15.56
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E. B. Parmenter	Barred Rock	5653	6085.50	Two-Year
J. J. Warren	Rhode Island Red	5427	5802.60	Two-Year
Fuzzydele Farms	New Hampshire	5178	5582.60	Two-Year
Lindstrom Poultry Farm	White Wyandotte	4969	5326.50	Two-Year

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—Friends, July, 1940.

STATEMENT OF MANAGEMENT AND OWNERSHIP OF EVERYBODYS POULTRY MAGAZINE PUBLISHING COMPANY, INC., PUBLISHERS OF THE NATIONAL POULTRY DIGEST

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Editor, Roland C. Hartman, Hanover, Pennsylvania.

OFFICERS—C. N. Myers, President, Hanover, Pa., Jas. T. Huston, Vice-president, Hanover, Pa., R. B Alleman, Secretary-Treasurer, Hanover, Pa.

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STOCKHOLDERS HOLDING ONE PER CENT OR MORE OF THE CAPITAL STOCK—C. N. Myers, Hanover, Pa.; Jas. T. Huston, Hanover, Pa.

We have no bondholders, mortgages or other security holders whatsoever.

JAS. T. HUSTON, Mgr.

SWORN TO and subscribed before me, a notary public, in the County and State aforementioned, on September 23, 1940.

N. R. BURGER, Notary Public

My commission expires April 13, 1943.

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NATIONAL POULTRY DIGEST

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Vol. 2, No. 23 November 15, 1940

When and How to Sell Chickens

By FRANK PRIEBE

Reprinted from Poultry Tribune

WHAT are chickens going to be worth?" "When shall I sell them?" Those are the two questions a poultry raiser never fails to ask and they are probably the hardest to answer. I shan't attempt to give specific answers. I don't know anyone who could. But if I can give you a little better understanding of how poultry is marketed, I think you can sell your chickens to better advantage.

Most poultry is killed and dressed in country packing plants. But some of it must be shipped to the markets live. The foreign population in the cities – Italians, Bohemians, Poles– as well as colored people and Jews prefer to buy their chickens alive and then have them dressed. The Jewish trade, particularly, wants light-skinned chickens and that is why White Rocks and Barred Rocks bring a premium on the "live market."

If you sell your poultry to a local poultry packing plant or to some buyer who in turn sells to a packing plant, the requirements are different. They want good healthy birds that are well filled out, but whether they are of one heavy breed or another makes little difference. Leghorns bring a few cents less because they aren't as desirable for meat purposes. In this case, although you

Poultry-Dairy Publishing Co., Mount Morris, Ill.
(Poultry Tribune, October, 1940)

sell your chickens alive, the price you get for them is based on the dressed market, because that is the market on which they are eventually sold.

Watch the Holiday Markets

There are times of the year—especially during the Jewish holidays—when the live market may be higher than the dressed market. At other times — especially during the Thanksgiving and Christmas season—chickens are worth more on the dressed market.

Producers often have been confused by the different prices quoted for poultry and this may help to explain them.

There is another point that should be made clear. The local poultry buyer to whom you sell your chickens deserves neither credit nor blame for the price. He doesn't set the price any more than one livestock buyer sets the price of cattle or hogs. The poultry markets—both live and dressed—are established in exactly the same way as the livestock markets. Your local poultry buyer bases his price on the market value of the poultry. That value is determined by the consumers, who, after considering the prices of other foods and how much they have to spend, decide how much chicken is worth to them.

When you are trying to make up your mind when to sell your poultry, remember this general rule:

Chickens, like all other perishable products, bring a better price if they are sold before the bulk of the crop is on the market.

For example, the majority of people don't have broilers—1½ to 2-lbs. chickens — ready to sell until July. Because so many broilers are sold at that time, the price then is usually the lowest of the year. So if you want a better price. the thing to do is get your broilers ready for market before July.

When to Sell

Probably three-fourths of all the frying chickens are sold in August and September. So if you want to get a good price for fryers, you want to have them ready to sell before that time.

One woman I know has sold about two thousand fryers every year for the last three or four years. Beginning about the middle of December, she starts 200 chicks every week for ten weeks. She grows them to 3½ lbs. By the end of May they are all sold. She tells me she has made between $1,200 and $1,400 every spring on those chickens. The reason she makes that much is because she has fresh fryers to sell when other people don't have—and so gets an unusually high price for them.

I realize that not everyone is equipped to raise chickens this way. But I don't know anyone who can't, if he will, get frying chickens ready to sell before the first of August.

That will always insure your getting a price that leaves you a profit.

Three-fourths of all roasting chickens—springs weighing 4 lbs. or more—are still sold in October and November. If you have yours ready to sell before then, you can always count on getting a better than average price.

Early Birds Make Profits

Last June, I stopped at an Iowa farm to look at some poultry and found the people loading up a bunch of heavy springs. There wasn't a bird in the lot that weighed less than 4½ lbs. This man and his wife had kept track of every cent they had spent on those chickens and they showed me the figures. They had a profit of 54 cents on each bird!

If their chickens hadn't been ready to sell until October or November, they probably would have got at least 5 or 6 cents a pound less for them — and it would have cost just as much to raise them. Their profit would have been cut in half!

I don't believe poultry raisers have ever been sufficiently impressed with how much difference it makes in their profit if they have their chickens ready for market before the bulk of the crop is sold.

Last year, for example, you could have sold a thousand pounds of 5-lb. springs for approximately $200 on June 15, $180 on July 15, $160 on Aug. 15, $150 on Sept. 15, and $120 on Oct. 15.

People often ask whether they are better off to sell their springs as broilers or fryers, or roasters, or capons.

This is my opinion:

If you have your own grain, which makes up four-fifths of all the feed growing chickens require, you can make more money on the larger birds — particularly if you will get them on the market early.

Less Fluctuation Desirable

As more people make an effort to get their poultry ready for market before the bulk of the crop is sold, the supply will be spread out more evenly. Prices will neither rise nor drop as sharply as they have. That has always caused trouble. When chicken became too expensive, people quit eating it. Before their interest could be revived the price had fallen to the point where producers suffered.

Prices will always fluctuate, of course, but if the supply is more even, changes in price will be less severe, and the demand will be steadier.

The American people have never yet had their fill of chicken. Whenever we can give people a steady supply of good chickens, which they can buy at a reasonable price, they will eat a lot more poultry than they ever have yet, and you can make money raising it.

Bowling League As Turkey Outlet

There are individuals in different communities who have built up special markets with poultry meats. Mrs. Cleve Joy, Holden, Mo., is one of those enterprising farm women, who, through special marketing, has been well repaid for her efforts.

Depression years set Mrs. Joy thinking about how to get more profit from the stock on the farm. Fat turkeys would bring much more than local prices if she could get in touch with the right customers.

A daughter was working in a nearby city and contacted some prospective customers. These first customers told others, and for 6 years all the Joy turkeys have found their way to the city at good prices. For the last 5 years there has been a contract with a bowling league which uses many turkeys and chickens for prizes.

Some tips that Mrs. Joy passes on to those who would cater to special customers are:

(1) Treat the customers as you would a special friend; give them the best birds you have.

(2) Make the package attractive; dress it ready for the oven and wrap it in cellophane.

(3) Deliver at the time the customer wants the fowl.

—Missouri Ruralist, October 12, 1940.

Pancakes Draw Hatchery Flock Owners

Free pancakes, with all the trimmings, brought large crowds of flock owners and other interested poultrymen to the Quincy, Illinois, Berry-Ajax Hatchery operated by George Berry, last winter. Having recently purchased the hatchery, George Berry, with his brother, Ernest, desired to meet the folks who supplied their hatching eggs. More than 300 persons came to eat pancakes and meet the new hatcherymen. Nearly 1,800 pancakes, between 600 and 700 cups of coffee and about 100 bottles of chocolate milk and orange drinks were served.

According to the report in Hatchery Tribune, October 1940, hatcherymen or other poultrymen anxious to draw crowds for any particular function can well consider the use of pancakes and syrup in attracting visitors. They come to eat and stay to listen.

AN exhibitor at the Oklahoma hatchery convention attracted a lot of attention with his "egg studio." Two talented girls, relates the Southwest Poultryman, drew cartoons of visitors on eggs. They used about 400 eggs during the convention.

Development of the Dressed Poultry Industry in the East

By PAUL H. TABER

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WITHIN the space of three or four years, the dressed poultry industry has undergone a radical change. The rapid development of poultry dressing along the Atlantic seaboard has been astounding and it has affected profoundly the old established dressed poultry interests of the Central West. New dressing plants are going up continually and old ones are enlarging their facilities. The popularity of fresh killed chickens has become so widespread that it has revolutionized the former methods of poultry distribution in the great distributive markets of the East. A study of this transformation is of vital concern to those who would be abreast of the times in the tremendous poultry industry of the country.

Its Development

The real development of this industry has occurred during the past three years, though the dressing of eastern poultry for consuming markets has been going on for some time past. I can visualize that best by presenting just a few statistics.

At New York City, the receipts of eastern iced chickens during the month of July were as follows: In 1937, 1,200,000 lbs.; in 1938, 2,775,000 lbs.; in 1939 and in 1940, approximately 4,000,000 lbs.

In analyzing the figures it is interesting to note that the tremendous strides were made chiefly in the States of Delaware and Maryland. They have come during the past two years, as will be seen by the receipts in July from those states at New York City. From Maryland in 1938, 41,000 lbs., and in 1939 and 1940, 600,000 lbs.; from Delaware, 178,000 lbs. in 1938, 647,000 lbs. in 1939 and 1,000,000 lbs. in 1940. To these totals must be added approximately 1,000,000 lbs. each year listed as coming from Pennsylvania and New Jersey but which, in reality, represent chickens raised in Delaware and Maryland, and to some extent in Virginia, which were dressed out in Pennsylvania and New Jersey plants.

Prior to 1938 "western" box-packed chickens practically monopolized eastern markets. It is a peculiar twist in the history of our

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industry that, after long years and much effort by trade leaders had been expended to educate the dressing plants in the West to dry-pack all poultry sent East, and, also, to hard-chill it as far as possible before shipping, along came the eastern iced chickens to capture, to a large extent, our consumer markets.

As the volume of eastern iced stock increased to the extent that it became a menace to the western boxed product, it gradually attracted the attention and close study of the larger western dressers. Was it a "flash in the pan" product; could it compete with what was considered the better chicken grown in the Central West; wasn't it a messy and cumbersome article to handle, both in wholesale and in retail stores, as well as to ship out of town, and did it not show the effects of a day or two carry-over?

Eastern vs. Western Chickens

At a large western convention in March of 1938 we were asked this question by a packer of that state:

"Will the public take those eastern ice-packed chickens in preference to the better western?"

We noticed an official in the poultry and egg department of a leading national chain store standing close by and we called him over and repeated the question to him. His answer was this:

"Our public likes the eastern product because of its extreme freshness; hence we like it too."

I shall not attempt any fruitless comparison of quality between the eastern and the western product, but its effect upon the marketing of western box-packed chickens is of sufficient importance to engage our attention at this time.

That eastern production has had great effect upon the marketing of western chickens is beyond question, and the consequences have been, and will be, far reaching. In respect to 2 lb. and under broilers, they now are on more or less of a year around production basis, thus altering the necessity of storing large quantities of the western product during the months of July and August, and making any storing hazardous; but that would not hold so true of central western territory, though that section cannot begin to consume all it produces.

It is in fryer sizes, 2½ to 3½ lbs., that the real effects of eastern production are most noticeable. The average Delaware and Maryland grower likes to market the bulk of his chickens in those weight classifications. Heretofore, that is, prior to 1938, western box-packed fryers held the center of the stage, for they were marketed in huge quantities from mid-August to October first. They were stored in a big way, and prices for those sizes went a long way in determining values of the larger sizes.

But what has happened during the past two or three years? Average U. S. freezer holdings of fryers on January first (a date which generally represents peak holdings each year) during the past five years were 15,000,000 lbs. During the early fall of 1938, faced with greatly increased eastern production, that quantity again was put away and everyone lost heavily.

Warned by that experience, and despite a very large crop, only 12,800,000 lbs. were in freezers on January 1 of this year. But even that quantity seemed too great a handicap, and, during most of the period of unloading, losses again were sustained, even though they went away at very cheap prices. Yet it is interesting to note that in the Chicago territory, which, of course, was largely free of eastern production, the sale of fryers during the entire spring period was far better and at higher relative prices than along the Atlantic seaboard.

Perhaps I cannot picture the exact situation as it relates to the effect of eastern production in truer colors than in what I have just told you.

But in the roasting sizes there is a different picture. There is a fairly liberal marketing of 4 lbs. and over from Massachusetts and New Hampshire, and a limited amount from Virginia, Delaware and Maryland. But the total is of importance only for a few weeks in the fall. That seems to be a natural set-up, due chiefly to the predilection of growers in the named states to market their springers, as an economic proposition, in the smaller sizes.

Considerations of Grade and Price

Fundamentally, there are three grades of eastern colored chickens coming into the New York market, based, shall we say, for lack of a more particular characterization, upon quality:

Virginia Grade

First, the Virginia grade. It is true that more or less stock occasionally is trucked from Delaware and Maryland into that state. But the Shenandoah Valley is noted for its fine poultry, especially its Plymouth Rocks, so that the basic material is excellent. Then, in the plant which has been furnishing the great bulk of our supply, a very careful system of grading is employed—four grades, of which the top grade is superior to anything coming into market, with the possible exception of one fancy mark from Philadelphia.

Hence, because of its excellence, the Virginia product, as now marketed, commands regularly a premium over any other going through regular trade channels, usually amounting to ½ cent a pound in all sizes, and, on firm markets, even more.

Delaware-Maryland Grade

Second, the Delaware-Maryland grade. Apparently almost 100 per cent "Crosses," it represents about two-thirds of our current receipts, and because of that large supply it determines basic values in New York most of the time, for the premiums obtained for extra fancy Virginias are predicated upon the market for Delaware and Marylands. Stock from other sections usually is sold on some basis in relation to them.

They represent, generally, a fine product, especially suitable for chain-store use, and they have found a very definite place in the scheme of metropolitan distribution. As an example, let me cite the large packers.

As we all know, many of them operate very heavily in the boxed product, having their own plants or contracting for the output of dressing establishments through the Central West from Texas to Minnesota and North Dakota; yet their branch houses keep calling for the eastern iced chickens because their customers, the butchers, demand the iced product when available. Thus they often are in a peculiar position, which is true at this writing. Their branches want the eastern iced chickens, but, because of their increasing receipts of western boxes, the central offices must force them to use fewer of the iced.

No possible blame can be attached to them, as it is purely a managerial problem, yet it tends to disturb the market for iced chickens since it limits the outlets for the latter by just so much.

New England Grade

Third, the New England grade. These either are straight Rhode Island Reds or have some mixture with Crosses. We shall not say that the basic quality is the least attractive of all of our receipts or that the grading is less carefully done, but the fact remains that, by and large, it represents something slightly inferior to the best of the Delaware and Maryland product. That fact is demonstrated just often enough to prove the point. On a fairly good, or usually good market, the New England chickens can be sold, as a rule, at top Delaware and Maryland prices. Let there be a turn to worse selling conditions, when buyers become critical, and goods must sell entirely on their merit or lack of merit, and we find price cutting beginning in the New England stock.

There are a few large plants located in other states and their shipments are sold on various bases, again determined largely by quality and grading. In lower New Jersey, two large dressing plants draw the great bulk of their raw material from Delaware and Maryland, and their product naturally is classified as such. In Massachusetts, one plant grades very closely, so that its fanciest quality often sells at Virginia prices. Other plants dress out and market White Leghorns, which, however, are more seasonal, and in much smaller supply at all times, than colored. Regarding Leghorns, it may be stated that, generally speaking, some particular buyers will pay a premium for small colored over Leghorns. Leghorns in sizes 1½ lbs. and smaller will sell even with colored. As the size increases, buyers prefer colored, even at higher prices, probably because of superior appearance.

Consumption and Storage Values

In any consideration of prices we must approach the problem from the dual standpoint, as we have noted above, of eastern and western production and marketing. We shall not attempt to touch costs of production for, while they are important factors, they vary not only in relation to each section but they vary in each section from conditions which often cannot be foreseen and which often cannot be combatted except through the process of time. But in the wholesale marketing end of the industry one fundamental factor must be borne in mind: The eastern iced product is packed iced in barrels and, except in unusual circumstances, it is not placed in freezers but sold at once to the best possible advantage, for each day's delay takes something away from its appearance.

That engenders a sensitive market condition, peculiarly susceptible to changing undertones of strength and weakness and leading to frequent price fluctuations, yet almost always providing an accurate picture of values as determined by supply and demand. That is as it should be, even thought at times it means loss to growers and dressers.

In boxed chickens we find a different picture, for with them it always has been a toss-up between current consumption values and so-called storing values. During the season of flush production of fryers and roasters, beginning about September first, receipts at all the leading consuming markets are far beyond any possible ability currently to consume. The surplus has to be placed in freezers to await the late winter, spring and early summer trade. That is a necessary function, yet it is highly speculative and thus it becomes a most important factor in influencing values during the September-December period of heavy marketing.

Growth in 1938

Prior to 1938 the extent of eastern production was too small to have an important bearing upon the problem. Its great growth that year killed the market for the frozen western product during the winter and spring of 1938-39, causing grievous losses to all stores of boxed chickens. Having learned the lesson through hard experience, the market for western box chickens was maintained at much lower prices during the fall of 1939. Yet, even so, the frying sizes showed little or no profit, in some cases losses, to stores in eastern seaboard territory. The story was better in central western cities where they did not have competition from eastern production.

There is, however, a very direct connection between values of eastern and western chickens which operators must ever bear in mind. Granting a preference for the eastern product, nevertheless, the price factor is, and probably will be, the determining one. At the same cost or lower, most buyers, including the chain-stores, will take the eastern chickens for current consumption; but if the price factor swings in favor of boxes, those same buyers will turn to the western product. And the reason is very simple. In retail channels of trade competition is very keen, often ruthless, and a cent or a half-cent may mean to a butcher the difference between profit, breaking even, or loss. For short periods of time, because of varying conditions of supply and demand, margins may widen, but inevitably, unlike Kipling's East and West, the twain must meet.

One may not delve into the future, yet it seems certain that eastern dressed chickens, 24 to 48 hours off the farms, are finding a very definite place in the consuming markets of the great eastern territory, a place won by merit and location close to those centers of population. That place has been won in the hard way—through direct competition with the long-established western product—and it will be held and strengthened by strict observance of quality, grading and honesty all along the line.

Let me urge every dressing plant to refuse to buy poor chickens—call them what you will, culls, thirds or any other designation. They hurt the sale of good chickens at all times, some of them are unfit for human consumption, soon or late there will be a hue and cry because of them which will find an all too ready outlet in the newspapers, and an irreparable damage will have been done to the industry which it will take years to undo.

◂◂ BALING wires stretched along the top of feeders, declares Norbest Turkey News, stop a lot of feather picking among turkeys by offering the birds something besides another bird's feathers with which to clean the mash from its bill.

◂◂ RULES FOR CULLING: Count the eggs; then count the hens. If there are less than half as many eggs per day as hens, the flock needs culling.
—Dakota Farmer, August 10, 1940.

Stud-Mating in Poultry Breeding

By WILLARD C. THOMPSON

Condensed from Hints to Poultrymen

A SYSTEMATIC poultry breeding program is indispensable to an efficient development of the poultry and egg industry. The objectives must be to increase both the quantity and the quality of eggs. Upon these factors rests much of the possibility of securing margins of profit from poultry meat and table-egg production. Under usual practices, from 10 to 15 hens are usually mated with one male bird. Each of these hens influences the character of the respective daughters equally with the male. The male, however, has influenced each of the progeny from the 10 or 15 hens with which he has been mated. It is indeed true that the "male is half the flock."

Some method of breeding management must be found which will make full use of the potentialities residing in the poultry sire.

The provision of separate small-size pens, in which flocks of one male plus 12 females can be managed, is expensive on the average poultry farm. It involves not only the cost of setting up several separate breeding pens, but also more labor in feeding and management.

The identification of high-quality, proved poultry sires is expensive. It involves the testing and elimination of many individuals. The capacities of the ancestors as to egg yields, egg size, hatchability, vitality of chicks and progeny performance should be known and included in the statement of a proved sire's pedigree. This eliminates many male birds from consideration for use in a breed improvement program. It necessarily adds to the cost of the male birds which are identified as proved sires.

Any male bird worthy of designation as a proved sire must also possess the strength, health, size, and standard type which are desired as characteristics of forthcoming generations. In other words, the proved sire must possess individuality.

The proved sire must have established evidence of his capacity to produce daughters of quality. This indicates that in reality male birds may be correctly termed proved sires only after their first season of service in breeding pens.

It is desirable to get more daughters from proved sires than the usual mating methods produce. Generally speaking, the poultry

New Jersey Agricultural Experiment Station, New Brunswick, N. J.
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breeder counts on 10 daughters from one good breeding hen each season. If from 10 to 12 hens are mated with a male bird, it means that the greatest possible number of daughters from a male bird in one season lies somewhere between 100 and 125 individuals.

Improving the Flock

Experience repeatedly indicates that definite improvement in poultry stock is secured most quickly, most economically and most efficiently through the use of known pedigree matings and the preservation of the identities of the parentage of each chick produced. Under the usual system of single-mating flocks, such identities have been preserved. The problem is to preserve these same values on a larger scale without running costs up prohibitively.

Poultry breeders have noted many times in recent years that there are wide differences between male birds as to their economical usefulness and efficiency as breeders. Each season many cockerels are reared on the average plant. A test should be applied and the results ascertained in the early weeks of the first season, if possible, so as to enable poultrymen to eliminate male birds which would probably be responsible for infertility, low hatchability, and poor vitality.

With the foregoing considerations in mind, a system of stud-mating was worked out and thoroughly tried during the normal breeding season. The selected breeder hens were made up in flocks of approximately 50 each. These flocks could just as easily have been 100 each, if facilities had been at hand. Each flock was provided with adequate trapnests and record forms. In each pen three male bird pens were erected. Each male bird pen provided approximately 15 square feet of space, with a perch, a feed hopper and a water pan.

Handling Stud-Mating

The hens were trapnested in the usual manner and the respective eggs were marked with the hen number and recorded as usual. The hens had been listed by the poultryman according to their pedigrees and other proofs of breeding value. On these listings were indicated the male bird with which each hen was to be mated. Each hen was placed in the assigned male bird pen not oftener than twice per week and at least one each week. The hens were taken from the trapnests and placed with the males only if eggs had been produced. This arrangement appeared to conserve the strength and vitality of the males, to greatly lessen the number of matings which took place, and yet to guarantee a high percentage of fertility.

The hens were allowed to remain in the male bird pens about three hours, or usually until the time of the next visit to the trapnests. No particular attention was paid to the behavior of the fowls and no effort was made to wait until it was seen that matings had taken place. In a great majority of instances, where the hens were allowed to remain from two to four hours with the males, matings took place and fertility resulted.

It is suggested that poultry breeders desirous of getting more daughters from proved sires, and stamping the qualities of rigidly selected poultry breeding sires on forthcoming generations as quickly as possible, may well consider the use of stud-mating as a method of handling poultry matings during the breeding season.

Cannibalism Can Be Controlled

Many poultry flocks, shortly after housing or complete confinement, are plagued with cannibalism. It is very doubtful if the vice is inherited, as many would like to believe. Most authorities consider cannibalism an aftermath of picking which started in the brooder house or on range.

Careful poultrymen can keep the vice under control. However, certain control measures that might prove effective on one farm may have no effect on an adjoining plant. A list of control measures follows. It has been clearly demonstrated that two or more remedies may be effective when one alone failed.

1. Determine the source of the trouble and eliminate it. 2. Watch the birds when trouble appears. Stay in the pen and try to identify the chief offenders; then eliminate them or remove them temporarily. 3. Tip the beaks, or use pickguards or other approved devices. Vent shields might be necessary (for unmated birds) if prolapsus develops. 4. Treat injured birds with pine tar or some other recognized salve or repellent. 5. Feed a higher protein (20 per cent) mash for a few weeks. 6. Reduce the amount or proportion of corn and feed more barley, wheat or oats. 7. Allow at least three square feet of floor space for the light breeds and four square feet for the American breeds. 8. Provide at least 10 inches of roosting space per bird. 9. Provide at least three 6-foot, or two 8-foot, mash hoppers, accessible from both sides, per 100 laying birds. 10. Keep the pullets busy. Feed the scratch or some pellets in deep litter to increase the activity of the birds. 11. Feed often and use a fairly bulky feed. 12. Keep the houses clean, cool and free from drafts.

—Edward S. Walford, Poultry Item, October, 1940.

Mycosis in Turkeys

By L. G. NICHOLSON
Pullman, Washington

Condensed from Washcoegg

UNTIL recently, mycosis was blamed for the majority of chicken illnesses. There is no way of determining the enormous financial loss and high poultry mortality resulting from such erroneous diagnoses. The majority of chicken raisers now realize the danger of an incorrect diagnosis and are, therefore, skeptical of anything less than a thorough post mortem examination of their birds by a person adequately and correctly trained for such work.

There are numerous reports that turkey growers are now being plagued by the supposed occurrence of this disease. There is a possibility that mycosis may actually be a predominant malady in turkeys in this state; however, if the condition is analogous to that of chickens, it is a rare disease, as shown by tabulated autopsy reports of the poultry diagnostic laboratories.

In order to enable the turkey grower to recognize the group of diseases classified under mycosis and thereby help to eliminate the danger of an erroneous diagnosis, the following brief descriptions are offered.

Mycosis includes any disease caused by a fungus, and is therefore, not a separate disease entity in itself. The most common of the diseases in this group are aspergillosis, favus, and thrush. As these diseases are sometimes transmissible to man, extreme care should be used to prevent any exposure.

Aspergillosis

Aspergillosis, sometimes called brooder pneumonia, is primarily a disease of the respiratory tract and air passages. It is caused by a group of molds, however, the species, Aspergillus fumigatus is usually considered to be the causative agent.

SYMPTOMS: The symptoms of aspergillosis vary according to the location of the invading organism. As various parts of the respiratory tract, including even the air sacs in the body cavity and the air spaces in the bones, have been described as being affected, the symptoms must necessarily vary greatly.

As a common site of lesions of this infection are in the trachea (wind pipe), bronchi and lung tissues, the accompanying symptoms would, therefore, be of a type indicating interfered-with or difficult breathing. If the lesions are in the mouth or trachea, a gasping, or hoarse wheezing may be noted. The birds sometimes show diminished appetite, lessened activity, and ruffled feathers. As the disease progresses, the weakness will increase. Frequently, a high body temperature accompanied by an intense thirst can be observed. If the air sacs and lower air passages are the affected organs, no abnormalities may be noted. The only indications of such an infection may be a general weakness and unthriftiness followed by death after a short illness.

LESIONS: Although lesions of aspergillosis have been reported as occurring in various locations in the birds, the most commonly observed lesions are found chiefly in the lungs and anterior air sacs. The lungs appear dark and inflamed as though the birds were suffering from a general pneumonia. Embedded in the soft lung tissues are firm, cheesy nodules, varying in size from that of a pin head to that of a pea, closely resembling those found in the lungs of pullorum disease affected chicks. Occasionally, larger whitish-yellow, button-like nodules have been found in the air sacs and lungs.

These lesions are quite suggestive of aspergillosis. However, for the accurate diagnosis of this disease, a microscopic examination of typical lesions is necessary.

MODE OF TRANSMISSION: Aspergillosis is believed to result from the use of moldy litter or moldy feed or by exposing the birds to dusty areas where the mold is quite prevalent. The birds, when exposed to this infected material, inhale the spores (seed-like bodies) of the mold and in such a manner become infected. Birds that are weakened by unusual conditions seem to be more susceptible than healthy birds.

PREVENTION: By avoiding the use of dusty, moldy litter and by refraining from feeding moldy feed, the most dangerous sources of infection will be avoided. Keep the birds in the best of physical condition by keeping their pens clean and supplying them with proper amounts of good feed and abundant amounts of fresh, clean water furnished in clean, frequently disinfected utensils.

TREATMENT AND CONTROL: Once a bird becomes infected with this organism, treatment is extremely difficult and unsatisfactory, chiefly because of the location of the lesions of this disease. Almost any product that will kill the organism may also injure or kill the birds. The daily cleaning of the quarters, combined with a program of frequently cleaning the feed and water utensils and disinfecting them with a 0.5 per cent solution of copper sulphate (bluestone), is a very wise procedure. The selection of clean litter and feed is essential to prevent further outbreaks.

Washington Co-Operative Egg & Poultry Association, Seattle, Washington.
(Washcoegg, July, 1940)

Favus

Favus is a mycotic disease involving the skin of the head. It is only rarely seen and is usually quite mild in extent.

SYMPTOMS AND LESIONS: The bare skin of the head including the wattles, dewlap and caruncles is the part primarily affected, although it may spread to the feathered portions. A white powder deposit is found which may accumulate to form a crust-like area. A microscopic examination is usually essential to differentiate between this condition and other scaly conditions of the head.

TREATMENT AND CONTROL: If the presence of this disease has been definitely ascertained by a laboratory examination, all affected birds should be removed and destroyed. It is advisable to move the healthy flock to uncontaminated surroundings and to thoroughly clean and disinfect the infected premises.

Thrush

Thrush, sometimes called moniliasis, is a fungus disease usually affecting the mouth, esophagus, crop, proventriculus, and gizzard. It sometimes causes severe losses in turkeys especially if some other condition weakens the birds, thereby lowering their resistance.

SYMPTOMS: It is usually quite difficult to recognize this disease on the basis of symptoms alone. However, many of the affected birds may appear droopy and weak, and stand around with their heads drawn back and their chests sunken.

LESIONS: This disease usually manifests itself as grayish-white or yellowish raised areas on the lining of the upper digestive tract. Occasionally, ulcer-like lesions are observed. The crop is the organ most frequently affected. The roughened lining sometimes has a "turkish-towel-like" appearance. The lesions, unless very severe, are not diagnostic. A microscopic examination should be resorted to before any treatment is attempted.

TREATMENT AND CONTROL: This disease is frequently associated with malnutrition and inadequate sanitation. It is important, therefore, to correct these conditions before attempting treatment. The use of copper sulphate (bluestone) solution about 1-2,000 dilution is recommended for the control of this infection. This solution should be supplied in wooden or crockery containers in place of the drinking water for a few days or until the birds improve.

☛ TESTS CONDUCTED by the Oklahoma A. and M. poultry department show that hens will eat three times as much green feed if they are fed three times a day than if they are fed just once a day.

Plenty of "A", You Say?

By H. R. BIRD
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VITAMIN A, as indicated by its position at the head of the alphabetical procession, was one of the first vitamins to be discovered. It would seem, then, that its properties and peculiarities should be better understood than are those of the more recently discovered vitamins, and that vitamin A deficiency, of all vitamin deficiencies, should be the least likely to cause trouble to the poultryman.

Some such view as this has been accepted in many quarters and the statement is frequently made that nearly all good practical mashes contain large excesses of vitamin A and its precursor or "mother"—the yellow pigment, carotene. All of this would probably be true except for one thing: vitamin A and carotene are both easily destroyed by oxidation. This fact has been known almost as long as anything has been known about vitamin A, but no one yet knows how important the fact may be.

Test Results Contradictory

Several Experiment Stations have contributed to our knowledge of the extent of this destruction under various combinations of conditions, and it is known that destruction of vitamin A and carotene is hastened by heat, by light, and by exposure to air and that the rate of destruction is influenced by the composition of the mash or other material in which the vitamin A or carotene is dispersed. Some investigators working with poultry mashes have obtained results which would indicate that under practical conditions, the vitamin A might easily disappear with sufficient rapidity to lead to deficiency below safe levels. Others have obtained results indicating such a slow rate of disappearance as to make deficiency very unlikely.

It has been reported that vitamin A in poultry feeds is destroyed more rapidly than carotene, and it has also been reported that the two are destroyed at the same rate. These contradictions show that even in scientific experiments it is not possible to control, or even to know, all the conditions which influence this destruction.

Perhaps the greatest limitation of experiments of this type is the obvious impossibility of duplicating experimentally all the combinations

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of heat, light and exposure to air and other feed constituents to which vitamin A and carotene are subjected in the ordinary routine of commercial feed storage and feed mixing.

The important thing from the poultryman's standpoint is not how much vitamin A and carotene his mash contains at time of mixing, nor how rapidly vitamin A and carotene are destroyed under certain fixed conditions, but how much vitamin A and carotene are actually left in the mash when it gets into the digestive tracts of his chickens.

Testing for Vitamin A

The best known method of measuring the sufficiency of a chicken's vitamin A intake is to kill the chicken and determine the amount of vitamin A stored in the liver. During the winter and spring of 1938-39 this procedure was carried out with the chicks that were sent in to the Maryland Livestock Laboratory for examination. It was hoped by this means to obtain some information on the prevalence of vitamin A deficiency. Just as this work was undertaken, a report was published by investigators at the New Jersey Experiment Station describing a similar survey of diseased laying birds sent in for examination.

This report revealed great variation in vitamin A storage among the hens examined, but in no case could the amount of storage be described as dangerously low, and there appeared to be little if any relation between storage and disease.

Among the chicks examined at the Maryland Experiment Station, the situation was quite different. Of 80 liver samples examined, 30 were dangerously low in vitamin A. These 30 samples came from 13 flocks of the total of 25 flocks involved in the study. Thus, of the two studies of this type conducted, the one with hens revealed no serious deficiency and the one with chicks revealed rather widespread deficiency.

This is not surprising in view of the relatively long period in which adult birds have been adding to their vitamin A stores, assuming, of course, that at some times during this period there will have been an excess of vitamin A in the ration. Chicks, on the other hand, begin life with relatively low vitamin A stores and even under the most favorable conditions do not begin to store large amounts until they are four or five weeks old, and they may easily be brought to the borderline of deficiency by feeding a mash in which vitamin A destruction has gone too far.

Poor Alfalfa Samples

It must be remembered that destruction of vitamin A and carotene goes on in individual feedstuffs as well as in mixed feeds. In an attempt to find a reason for the extent of vitamin A deficiency in the chicks mentioned above, 18 samples of alfalfa leaf meals and alfalfa meals being used in poultry feeds were obtained and their carotene content determined. Twelve of the 18 samples were so low in carotene as to be useless for poultry feeding purposes. Of two alfalfa leaf meals differing only insignificantly in price, one may furnish almost no carotene, and the other when fed as 5% of a mash may in itself furnish carotene equivalent to several times the vitamin A requirement of any class of poultry.

The other constituents of poultry feeds which must be considered as vitamin A sources are yellow corn, which cannot be depended upon to supply enough, corn gluten meal which, like alfalfa, may be variable, and fish oils.

The solution to the problem lies partly in rapid turnover of mixed feeds, but perhaps even more important is thorough control work directed toward eliminating all low carotene alfalfa meals and leaf meals.

Turkey Apartments

Turkeys are kept in a made-over barn by Mr. and Mrs. Albert Grabbe, Indiana, for most of the fattening and growing period. After hatching, the poults are confined to batteries, then go to 12 by 16-foot brooder houses, remaining there until they are 3 to 4-weeks old. After that they are moved to a 28 by 88-foot, three-story turkey apartment. An old barn was worked over to provide 8 pens ranging in size from 10 by 14, to 14 by 16 feet. Each pen holds 50 to 65 birds, with sufficient total capacity to house 500 turkeys until maturity.

According to the report in the Farmers Guide, the poults remain in the barn until about 3 months old, are put on lespedeza range, provided with shelters, for a few weeks, and are then returned to the pens for final fattening.

JACOB GRAVES of Boston was the country's first commercial hatcheryman, says W. D. Termohlen. As early as 1873, Graves was engaged in doing custom hatching and selling four to six-weeks-old chicks. The first long distance shipment of baby chicks was made in 1902, according to a report in Produce Packer. The chicks were sent from Stockton, New Jersey, to a Chicago buyer. Cardboard boxes for chick shipments made their first appearance in 1906 and large size incubator manufacture began in 1907.

Diary of a Poultryman

By PERCY S. WHITE
Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

November 1—Estimated count of 350 pullets still out on the range. Same day last year, the estimate was 1,000 birds. In other words, we are ahead of the game this year. But the easy part of the job of housing them has been done. From now on it is going to be a battle to catch semi-wild stock roosting 40 feet high in trees.

November 4 — The range pullets are getting quite shy. Whenever one of us goes out there, they begin to scatter to the four winds. Donnie spent most of the day trapping them in the house and managed to catch 75. With the holdovers in the battery, we were able to use more vaccine. The battery is clear now with the exception of some market birds.

November 6—The water barrel on the range and all the fountains have been filled. I have wondered for several days if it wouldn't be a good policy to take up the water supply line. But that is off of my mind now, for we took up the pipe today. The joints of pipe have been piled together, the threads painted with heavy crank case oil and then wrapped with a burlap bag. Then oil was poured all over the burlap. The threads ought to be in good shape for next year.

November 7 — All mash hoppers have been collected from the range with the exception of two at each house. These were placed inside in order to entice the birds to go in. Of course, we scattered grain in front of each house as a bait. We are going to discontinue housing for a few days, so that the pullets won't be so suspicious. They'll get used to going inside to eat and then if we should happen to have rain, we will get most of them in short order.

November 9—There was only one coop of market birds, but I took them in to the auction just to get rid of them. This cleans the battery for the second time in the last few weeks. They were all little ratty pullets that had best be sold.

November 11 — Donnie White picked up 85 pullets on the range during the day. While it didn't take the full dosage of a bottle of vaccine, I figured that it would be better to waste a wee bit than to hold the birds in the battery. The loss of a few cents worth of vaccine was over-balanced by the convenience of handling them only one time. The pullets are stepping right along in production, especially those in the east house. The north house birds are beginning to eat much better during the last few days.

Everybodys Poultry Magazine Publishing Co., Inc., Hanover, Pa.
(Everybodys Poultry Magazine, November, 1940)

November 16—Something has evidently happened to the tanks in the waterers. All of a sudden pits or rust spots have appeared in the bottoms of all the waterers in the three north houses. I have two new ones on hand, but I ordered six replacements today. This afternoon Harold and I replaced one in the east house. Tomorrow we will re-equip the worst waterer in the west house.

November 17—Egg size, as far as the pullets are concerned, is on the up and up. Of course, there are peewees and pullet size eggs, but the birds are just commencing to lay. I am also getting lots of mediums and large eggs. The large eggs are not quite in the majority, but size is increasing.

November 20—A few more pullets were brought in from the range, but we still do not have enough to vaccinate so they are being held over in the battery.

November 22—It is cleaning time for brooder houses. There are still a few birds out on the range, but I feel that I shouldn't delay any longer with the cleaning. I am a strong believer in cleaning up the houses, dousing them with creosote and letting them stand idle for several months. This standing idle has a good moral effect on any bugs which might be sticking around. And — to be perfectly frank about it—I dare say that there are a couple or so on the ranch. I have been looking at this year's young stock with a skeptical eye, and it seems to me that I am beginning to see things that are not pleasant to think about.

November 23—The old hens are beginning to slow down. But it is time for them to slack off and get some warm clothes on for winter. The pullets are coming along in good shape. Production still continues on the up and up and egg size is steadily increasing.

November 25 — The pullet crop has been harvested. All available hands went out on the range and drove the remaining birds in No. 1 house. That is, all but one and she flew the coop. She got scared, flew over the house and down in the woods. We will wait a couple of days until she calms down a wee bit and then we will be able to get her easily.

November 27 — Harold happened to see the lone pullet ease into one of the colony houses while he was cleaning today. All of the birds are now housed and the season is officially closed. All of them have been vaccinated against pox. There was one bottle of the dope left over, but it isn't supposed to be good after March 1, so I am afraid it will have to be charged to profit and loss. Maybe some small producer will come along needing a few shots. Oftentimes, visitors inquire if I handle feed, supplies or equipment. The brooder house cleaning is stepping right along.

November 28 — It's queer to me how by-products, so to speak, accumulate in the egg room. The by-products are blood spot, cracked, and double yolked eggs. They just don't rank as a top grade product and it is easy to put them aside. The residue had become so large that something had to be done. I sold everything that would stand hauling to the auction. Of course, the spots and doubles had sound shells, but a few of the cracks were not so well preserved. The volume in all grades of eggs is steadily increasing on the auction.

November 30—Thanksgiving Day —again — and another holiday. The birds in the north house observed the day by feasting—on the innards of one of their fellow flock members. Tug-of-war and I-have-it-catch-me were played with enthusiasm. When I found her, the victim was bled white; her comb was as white as chalk. But I have much to be thankful for today. I am thankful that I didn't lose a whole flock by cannibalism.

National Board Name Changed

The National Poultry and Egg Board has changed its name to the Poultry and Egg National Board, according to Homer I. Huntington, manager. The change was necessary because of the similarity of the old name to that of a firm already existing.

The Board has opened offices at 308 West Washington Street, Chicago, Illinois. Mrs. Kathryn B. Niles, home economist, formerly with the Institute of American Poultry Industries, has begun her duties with the Board, managing its home economics activities.

SOME 1,332,464 pounds of eggs were distributed free in connection with the government's school lunch program during the school year ending with May 31. 1940, according to The Agricultural Situation.

The Government Egg Buying Program

By W. D. TERMOHLEN

Surplus Marketing Administration, Washington, D. C.

Condensed from a Talk[*]

DURING the year beginning July 1, 1939, and ending June 30, 1940, the hens and pullets on over five million farms throughout the country are estimated to have produced slightly over 38 billion eggs. During this 12-month period the production was upped slightly over 8 per cent above the average of the previous 5 years, or about 8 million cases of eggs.

The weather in the fall of 1939 was unusually mild and, with just under 5 per cent more birds in laying flocks than the five year 1934-38 average, there were produced over 22 per cent more eggs in November and almost 31 per cent more eggs in December than the average of the five previous Novembers and Decembers.

Obviously, this presented a problem to poultrymen, particularly in view of no material improvement in the general business situation.

A chaotic condition began to develop. There were some in the market centers who were predicting (and in not a few instances recommending) prices in the spring which would have brought back to farmers the days of 1932, when, from March through June, prices received by farmers for the country as a whole averaged just under 10.5 cents a dozen. There seemed no dispute to the fact that a surplus of eggs existed above the normal market's ability to absorb them, except at drastically reduced prices.

The surplus egg removal program, administered by the Division of Marketing and Marketing Agreements of the Agricultural Adjustment Administration and the Federal Surplus Commodities Corporation (now known and hereinafter referred to as the Surplus Marketing Administration), was put into effect as the one authorized method which the Federal Department of Agriculture had available to directly aid the poultry industry in the event of low and unsatisfactory egg prices.

Authority for the Program

The authority which makes possible the initiation of surplus egg removal programs is granted under Section 32 of Public Law No. 320, passed by Congress in August, 1935, and since amended from time to time. Briefly, this authority provides that 30 per cent of the gross receipts

"The Surplus Egg Removal Program of the Surplus Marketing Administration"
Presented at NEPPCO Exposition, Atlantic City, N. J., October 4, 1940

collected each year under the customs laws, supplemented by additional sums authorized by the Congress, should be maintained in a separate fund to be used by the Secretary of Agriculture for certain purposes.

The one we are interested in, clause 2, encourages domestic consumption of agricultural products by diverting them, by payments of benefits, indemnities, or by other means, from the normal channels of trade and commerce; or by increasing their utilization through benefits, indemnities, donations, or by other means, among persons in low-income groups as determined by the Secretary of Agriculture.

The Poultry Division of the Surplus Marketing Administration has the job of continually watching the situation facing poultrymen. The various statistics available through the Agricultural Marketing Service and the Bureau of Agricultural Economics of the Department of Agriculture are constantly in use. These statistics are supplemented by price data from certain market reporting agencies on the principal markets.

Frequent contacts are made by representatives of the Division with representative poultrymen and market people. Prices received by farmers and the relationship of these prices to parity are carefully studied. Consideration is also given to industry trends, feed-egg ratios, wholesale food price levels, indices of business activity, urban purchasing power and the many other factors which have been shown to be necessary in arriving at an appraisal of supply and demand conditions.

Studies of the relationship of these many factors are constantly carried on in an effort to find better measuring sticks and to aid in determining when it seems reasonable and desirable to initiate a surplus removal program or to discontinue one which may be in operation.

Under the authorization mentioned we use two different methods of removing egg surpluses—(1) direct purchase either on the New York and Chicago Mercantile Exchanges or on the offer and acceptance basis in various parts of the country, and (2) through the Federal Food Order Stamp Plan. Either one or both of these methods may be in effect at the same time.

The Direct Purchase Method

Surplus eggs removed by the direct purchase method are turned over to State relief agencies for distribution to persons on relief or are donated to sponsors of free school-lunch programs.

A study which I made some years ago indicated that in families having an annual income of under $750 the estimated annual average per-capita egg consumption was 11 dozen. Among people eligible for relief it appears quite safe to estimate that the per-capita consumption is not half that amount. This fact, plus observations made and contacts with public relief officials, gives us satisfactory evidence that the distribution of surplus eggs removed under the direct purchase programs has no adverse effect on normal marketing channels.

Florea, in an article in the March, 1940, issue of Poultry Tribune, reported on a private survey made in Springfield, Illinois. Fifty relief families were interviewed. Twenty-five said they were not using any eggs before the initiation of the stamp plan in that city in October, 1939. The average annual use of eggs by these 50 families prior to the stamp plan was 57 eggs. The average per-capita consumption of eggs in the country in 1939 was just over 26 dozen.

It may be of interest to you to learn that when eggs are donated to state relief agencies for distribution, the agencies are given a schedule of the maximum quantity of eggs to be distributed to relief families per month. These quantities vary according to the size of the family, and average 1½ dozen a month per person. This is the maximum quantity and averages 18 dozen a year. Last February, in California, the distribution of eggs to relief people averaged 10 eggs a month. In March, in New York city, the average distribution to people on relief was 14 eggs.

The Stamp Plan Method

The Food Order Stamp Plan was initiated in May, 1939, at Rochester, N. Y. During the first few months, it was carried on largely on an experimental basis in a few communities. In case some of you are not familiar with the stamp program let me describe it briefly.

Persons on relief purchase a dollar's worth of orange stamps per week for each person in the family, and are given 50 cents worth of blue stamps for each $1.00 in orange stamps purchased. The blue stamps can be used only for the purchase of commodities which are designated by the Secretary of Agriculture as surplus agricultural commodities. Eggs have been on the surplus list since the inauguration of the program.

The relief people participating in the program use the orange and blue stamps for purchase of foodstuffs at stores and the products move through the normal marketing channels clear to the consumer.

Some people, particularly in the egg trade, seem to have an idea that in the operation of the stamp plan, eggs purchased by the SMA are turned over to grocery stores which in turn distribute them for blue stamps. This is not correct. In a city or area where the stamp plan is in operation, surplus commodities purchased directly by the Surplus Marketing Administration are not distributed to families receiving public assistance. They may be distributed in such communities, however, for use in the free school-lunch program.

Grocerymen buy eggs which are sold for blue stamps just as they do in their ordinary business practice, that is, directly from the egg trade. The people on public assistance who are voluntarily participating in the stamp program go into the stores to make their purchases. If they want eggs, they can buy them with the blue stamps because, at present, eggs are carried on the surplus list. In an area where the stamp plan is in operation there is thus added additional purchasing power, and more eggs are purchased than otherwise would be the case. Let's see how this comes about.

In July it is estimated that approximately 67,000 cases of eggs were removed from the market, and the demand side of the egg ledger of merchants increased nearly one-half million dollars. From December of 1939, through August, 1940, it is estimated that nearly 400,000 cases of eggs moved into consumption through the food stamp plan. While direct purchases were discontinued the first of September, eggs are still listed as a surplus agricultural commodity. The food stamp plan is now in effect in over 150 cities and areas, with about 3 million people participating. Since it is expected that the number of persons participating in the food stamp plan will be in the neighborhood of 5 million by Christmas, it is believed that poultrymen will be given a considerable amount of help through this program.

If the price of eggs does not improve to the point where it seems desirable to remove them from the surplus list, and they should continue to be listed throughout this present fiscal year, it is estimated that in the neighborhood of 15 million dollars worth of surplus eggs would move into consumption under the stamp plan and approximately 2 million cases, or 60 million dozen, would be removed from the market.

Recent SMA Operations

At the end of August it was announced that the direct purchase of fresh eggs would be discontinued after September 3, until further notice. Since December, 1939, the SMA has purchased 2,330,000 cases of eggs. Daily purchases occasionally exceeded 100,000 cases. The heaviest purchase for a single-day was on May 24, when the administration accepted offers of more than 131,000 cases. The heaviest month of purchase was June, with nearly 900,000 cases being purchased.

While it had been predicted in some sources, in January, that egg prices would reach the levels of 1932, average prices received by farmers during the 6-month period March through August were just two-tenths of a cent below the same period in 1939. What prices would have prevailed had the direct purchase and stamp plan programs of the Surplus Marketing Administration not been in effect is, of course, a matter of conjecture.

Effect on the Industry

Another complaint against the surplus egg removal program is that it causes over-expansion in the industry. Let's look at the statistical record.

During the so-called lush years of 1925-29, the average annual per-capita consumption of eggs was nearly 28 dozen. For the 5 years 1935-39, the average per-capita consumption was slightly over 24.5 dozen, or 12.5 per cent less than the 1925-29 period. It is also interesting to note that, since the authority making possible the surplus egg removal programs became effective, there has been a gradual stepping up of per-capita consumption as follows. In 1935, 22.9 dozen; 1936, 23.3 dozen; 1937, 25.3 dozen; 1938, 25.5 dozen, and 1939, 26.2 dozen. This year will again show some gain.

This would certainly not indicate that in the carrying on of surplus removal programs the question of unwise expansion of the industry is disregarded.

As previously mentioned, we watch industry trends. We fully appreciate the fact that there has been an improvement in the laying ability of the hens and pullets making up the flocks of the country. From the 1925-29 period to the 1935-39 period, average production per bird was stepped up above 8 per cent. During the 1925-29 period it is estimated that the number of chicks per farm on July 1 averaged 144. Since we initiated buying programs under the present authority in the spring of 1936, we have been of the opinion that there should be in the neighborhood of 130 chicks on hand per farm on July 1.

July 1 Chick Population

The average number of chicks on farms on July 1 for the 5 years 1936-40 has been 131.

In the spring of 1936, during March-June 31, 418 cases of eggs were purchased under a surplus program. Chicks per farm in July 1 were 144.4, nearly 11 per cent above 1935.

From January through June of 1937, there were purchased 290,944 cases. On July 1 of 1937, there were on hand 117.4 chicks per farm, a decrease of nearly 19 per cent from 1936.

In March and April of 1938, there were purchased 60,944 cases. On July 1 of 1938, there were 132.6 chicks on hand, an increase of 13 per cent over the previous year, when chicks were the lowest in numbers since 1927.

In May and June of 1939, there were purchased 107,788 cases of eggs. On July 1, 1939, chicks on farms numbered 136, an increase of not quite 3 per cent over 1938.

From December, 1939, through June, 1940, purchases were 2,101,287 cases, the largest purchase program the administration had ever carried on. In addition, several hundred thousand cases were removed from trade channels through the stamp plan. On July 1, 1940, there were, on the average farm, approximately 125 chicks, a decrease of 8 per cent from July 1939.

A greater reduction than this, which seemed possible early in 1940, would certainly not have been desirable from a producer's; as well as consumer's standpoint. These statistics indicate that when the largest purchase programs were carried on in the spring months—the period of flock reproduction—instead of an expansion to the industry, there was actually some contraction. This should give assurance to the industry that a surplus egg removal program does not necessarily mean encouragement of industry expansion.

On August 1 of this year, the SMA had in storage slightly over 1 million cases of eggs. This represented about one-half of the Government purchases during the spring egg flush. Had all of the eggs purchased been immediately distributed, there might have resulted some disruption in normal marketing channels. This shows the care and consideration taken by the administration. A distribution program has been worked out to move these eggs in an orderly way through school-lunch programs, supplemented with some donation to state relief agencies and welfare organizations for distribution to public-assistance families. If the schedule which is planned by the distribution division of the administration can be followed, it should be possible to remove all the surplus eggs held in storage by the first of the year and, at the latest, by February first.

Fall Price Increase Due

When the administration's holdings of storage eggs were deducted from the total shell egg holdings on August 1, it was found that the actual commercial holdings were slightly over 300,000 cases less than on the same date in 1939, and 772,000 cases below the 5-year August 1 holdings. Considering the 8 per cent less chicks on hand on July 1, and an expected 5 per cent less hens and pullets in farm flocks on January 1, this indicates that a healthy situation should prevail for the balance of this year and into next spring. Particularly should this be true when one considers the improvement in the business and employment situation which is being brought about through the National defense program. Eggs are still listed on the surplus list under the food stamp plan, and this will help to remove additional quantities of eggs from the normal market channels.

Surplus eggs bought by the Administration are not offered for sale or resold. Unless something goes absolutely hay-wire with the old favorite law of supply and demand, a smaller supply and better demand make it seem most reasonable to assume that egg prices should be somewhat higher during the months to come than they were for the same period a year ago.

Other Benefits of the Program

There is a benefit to the poultry industry from the surplus removal programs other than that of price stabilization. This is the practical demonstration that the real underconsumption of the industry's products is among the low-income group of our population.

Florea, in the article previously referred to, reported that persons participating in the stamp plan increased their egg consumption 560 per cent. A study made in Des Moines, Iowa, during a 12-week period following the inauguration of the stamp plan in that city on August 23, 1939, brought out an interesting fact. It was found that egg sales increased 52 per cent in low-income area stores, while in upper—and intermediate-income area stores there was a slight decrease.

A study being made of regional food preferences, shown in purchases families make with their blue stamps, has indicated a national average of approximately 18 per cent of the blue stamps utilized for eggs since the program was initiated. Pork and butter are the only two foodstuffs which have been on the surplus list that exceed eggs, and butter has had just a slight lead.

Food Preferences

In July, the national average per cent of blue stamps used for eggs was 14.3. In the Northeastern region, 17 per cent was used and in the Southern, 9 per cent. This indicates definite regional preferences. In July there were 23 commodities listed on the surplus list. Nationally, the only products exceeding eggs in per cent of blue stamps used during the past few months were pork and butter—butter by just 1 per cent.

In the northeastern region, a similar relation existed as nationally in July. In the southern region, pork, lard, and white flour were the commodities exceeding eggs in the percentage utilized. Butter was next below eggs. In the midwestern and western regions, the comparison was very similar to that of the northeastern region. Seasonal variations are also evidenced by these studies.

The surplus egg removal programs are not claimed to be perfect in their operation. We are constantly and vigorously carrying on extensive studies to enable us to better determine the existence and extent of surpluses, and to improve the operating technique of such programs.

We welcome, at all times, the council of industry groups. It has been a real pleasure to have held several conferences with representatives of the Northeast regarding our program during the past year.

One thing which we believe has been quite definitely brought out by the surplus egg removal programs is the fact that the science of production has out-run the science of distribution. It is the field of distribution, and a better acquaintance with consumers, which should receive the chief attention of members of the industry during the next few years.

Cull Them or Lose Them?

Attention is called so frequently to disease control that one theoretically should have no losses from disease. Unfortunately, that is not the case.

Adult mortality is the major worry—and loss — at this season of the year. It is actually a problem of flock reduction, for many birds are removed by culling that would otherwise fall by the wayside were they not culled at an earlier date.

Disease not only reduces the flock in numbers. It also reduces their potential egg production. Consequently, the problem is of dual economic significance; it is a dollars and cents proposition to the poultryman.

Why not follow a better sanitation program this winter? Many good birds can be saved; many more eggs will be gathered from your flock. Your houses will be operated at a higher efficiency if such excessively heavy culling is not necessary this winter.

Losses from infectious and contagious diseases may be controlled largely by the poultryman. Do not take a chance. Do not buy stock indiscriminately. Do not place exhibition birds back in the flock without quarantining them for from three to four weeks.

Exercise similar caution when introducing any new stock from outside sources. Keep the itinerant peddler or buyer out of your pens. Never allow him to bring his potentially contaminated coops on your premises. Allow your neighbors to inspect your poultry — through the windows only.

Buy your chicks with discrimination. Check up on the sanitary practices of the hatcheryman or breeder from whom you expect to buy your chicks.

Your losses from culling and adult mortality can be greatly reduced if you will refrain from doing many of the things which have caused grief to your neighbors.

—Edward Walford, Poultry Item, Nov. 1940

POULTRY RESEARCH

Breed Differences in Thick Albumen

A significant breed difference in the thick albumen content of eggs from a group of Light Sussex hens and Silkie pullets was noted in tests carried on by C. D. Gordon of the U. S. D. A., says a report in Poultry Science, Vol. 19, No. 5.

The Light Sussex eggs averaged amount 64 per cent thick albumen, while the Silkie eggs averaged approximately 60 per cent thick albumen.

Blood Spot Inheritance and Variation

In tests where about 6,000 eggs were broken and examined for size and number of blood spots, there was found to be no significant correlation between percentage of blood spots and egg production, egg weight, or body weight, according to the report in Poultry Science, Vol. 19, No. 5, on work carried on by J. P. Quinn and A. B. Godfrey of the U. S. D. A.

A statistical analysis indicated that there were significant breed differences in both yolk and albumen spots. The mean percentage of total blood spots in the Rhode Island Red eggs was 62; of the White Wyandottes, 32; of the White Leghorns, 4; of the Rhode Island Red and White Wyandotte crosses, 43, and of the White Wyandotte by White Leghorn crosses, 16.

Gizzard Erosions

Gizzard erosions are widespread in occurrence in Great Britain among chicks 2 to 8 weeks of age, according to Dr. W. P. Blount, who concludes in the Veterinary Journal (Vol. 95, p. 30) that, somewhat contrary to results obtained by the California group, a ration containing 20 per cent bran, 12 per cent alfalfa and 3 per cent dried grass had no protective effect. No relation was found between gizzard erosions and body weight, gizzard weight, gizzard: body weight ratio, and the number or degree of erosions, nor was any evidence obtained that gizzard erosions render chicks more susceptible to coccidiosis.

—Carl H. Schroeder, Everybodys Poultry Magazine, November, 1940.

Susceptibility of Progeny of Paralysis-Free Strain

Fowl paralysis was eliminated from a strain of badly infected stock by systematic, selective inbreeding. In this connection Dr. F. Blakemore, who conducted the experimental project in question, made the interesting and exceedingly important observation that the progeny of the stock from which fowl paralysis was eliminated through breeding, was still highly susceptible as shown by the occurrence of the disease following injection of tissues from natural cases and exposure to natural infection. This is in agreement with this reviewer's observation to the effect that a strain of chickens which has performed very satisfactorily as regards freedom from the paralysis complex on the original premises, does not necessarily give assurance that it shall perform as well on other premises or under other circumstances.

Dr. Blakemore leaves little doubt concerning the infective nature of this disease complex, which is often overlooked, but a point which must be taken into account when setting up control measures. (Journal of Comparative Pathology and Therapeutics, Vol. 52, p. 144).

—Carl H. Schroeder, Everybodys Poultry Magazine, November, 1940.

Effects of Lights on Turkey Fecundity

Reproductive organs of hens were stimulated to a state of maturity more rapidly than were those of toms, in tests at Pennsylvania State College when turkey hens and toms were placed under lights at 32 weeks of age.

Four days after hens were placed under lights, mating occurred and much aggressiveness was shown. A high percentage of matings and aggressiveness was shown until the hens began to lay, then the percentage declined rapidly. It appears that toms should be placed under lights four weeks before the hens with which they are to be mated. Also, there is little evidence of preferential mating.

Goitrogenicity of Soybeans

Raw soybeans used as the sole protein supplement in a starter mash which was low in iodine produced thyroid glands about six times as large per unit of body weight in six-weeks-old chicks as did casein, according to H. S. Wilgus, Jr., F. X. Gassner, and A. R. Patton of the Colorado State College Experiment Station, and R. G. Gustavson of Colorado University.

Although goiter was produced on casein, doubling of the casein had no effect on the size of goiters, whereas doubling the soybean oil meal resulted in doubling the size of the goiters. Casein added to the soybean oil meal ration slightly modified the severity of the goiter, says the report in Poultry Science, Vol. 19, No. 5.

Further tests indicated that the goitrogenicity of soybeans is not directly related to a poor reproductive performance noted.

Feed Utilization Efficiency

Crossbred broilers were more efficient in feed utilization than Barred Rocks, in tests carried on by C. W. Hess, T. G. Byerly, and M. A. Jull at the University of Maryland, says a report in Poultry Science, Vol. 19, No. 5. The studies showed that it required 3.33 pounds of feed per pound of gain for the purebreds and only 3.08 pounds for crossbreds. The results also show that, among the various sires used, the sire which produced the most efficient purebred progeny also tended to produce the most efficient crossbred progeny.

Sardine Meal as a Supplement to Other Protein Feeds

Sardine meal was a more desirable supplement to soybean oil meal and dried skimmilk, cottonseed meal and dried milk, or soybean oil meal and cottonseed meal, in chick rations, than was meat and bone scraps, in tests carried on at the Texas Agricultural Experiment Station by R. M. Sherwood and J. R. Couch.

Sardine meal produced larger gains, and chicks had a smaller percentage of mortality than when fed meat and bone scraps, when these feeds were supplementing soybean oil meal and dried skimmilk. In combinations with other supplements, however, sardine meal gave slightly higher percentages of mortality, says the report in Texas Bulletin 569.

Value of Protein Supplements

Gross values of various protein supplements were determined by E. J. Robertson, J. S. Carver, and J. W. Cook of the Washington Agricultural Experiment Station. The arithmetic mean of the gross value of the supplements was, for each, as follows:

Herring fishmeal, 101; pilchard fishmeal, 96; sardine fishmeal, 95; dried buttermilk, 92; dried skimmilk, 87; salmon fishmeal, 86; meat meal, 55; Manchurian soybean oil meal, 78; domestic soybean oil meal, 76; dried Alaska peas, 61; liver meal, 59; dehydrated alfalfa, 37; copra meal, 22.

Herring fishmeal and Alaska peas gave relatively high gross values in all combinations. When combined in ratios down to 50 parts herring fishmeal to 50 parts Alaska peas, by weight, gross values were not significantly lower than when fishmeal was fed alone, according to the report in Washington Bulletin 338.

OSCAR TODD, Spirit Lake, Iowa, while golfing, drove off from the second tee, hit a chicken and killed it, but he could not find the golf ball. The club's pro took the chicken home, dressed it and found the ball inside.

How Breeding Affects the Poultry Industry

By H. L. WILCKE
Iowa State College

Reprinted from U. S. Egg and Poultry Magazine

THE influence of breeding has been apparent in the poultry industry since the time of domestication of the species. History records that the domestic fowl was developed from the various species of jungle fowl, and through a process of selection, crossing and intercrossing, various breeds and varieties, as we know them today, were developed.

At first it seems that the birds were kept for cock fighting fully as much and perhaps more than they were for the production of meat and eggs. Thus, the birds which had been selected for fighting were carried through the land by armies of the various nations which traveled to conquer foreign lands and, incidentally, it was discovered that the few eggs laid by the female of the species were excellent food. In this manner, the early races became interested in the chicken as a source of meat and eggs as well as a means of entertainment, and the processes of breeding and selection which were inaugurated at that time started a long series of events which are of great economic significance today. Later, cock fighting began to be held in ill repute and it was suppressed in many countries.

Beginning of Poultry Exhibitions

One of the results was the inception of poultry exhibits. The first of such exhibitions in this country was held in about 1849. This type of show created an interest in feather pattern, in feather color, shank color, type, and other characteristics which make up the various breeds and varieties. In this way, the breeds were standardized. The variations in the same breed that had been developed as a result of the individual breeder's fancies were compared, and the ideals for the various breeds and varieties were established as a result of these comparisons and discussions. Breeders were encouraged also to exhibit new breeds and varieties which were developed from time to time, and the American Standard of Perfection, which is still the final word on breed and variety standards, was developed.

The Standard, as it is almost universally known, is the only authority in existence for the true characters of various breeds. It is the closest that we have in the poultry world to the breed registers which exist for other classes of livestock. In many cases too much emphasis was placed upon feather color, feather pattern or other characters which had little to do with economic qualities. As a result, some of the specimens were lacking in the ability to produce a large number of eggs, and were lacking in vitality, or other desirable qualities.

Institute of American Poultry Industries, 110 N. Franklin St., Chicago, Ill.
(The U. S. Egg and Poultry Magazine, September, 1940)

The breed standards have, however, served and are serving definite purposes because, first of all, they have set up standards which every poultryman recognizes, and they have given buyers definite ideas of what to expect when they purchase a certain breed and variety.

Second, by the setting of certain definite disqualifications in breed and variety standards, breeders have been able to eliminate many undesirable qualities from specific breeds and minimize many others.

Third, they have helped prospective poultrymen to decide which breed or variety should be of the greatest economic value, since the standard breeds have become known for various qualities. For instance, the Asiatic breeds and certain other heavy breeds have become known for their meat production qualities, while the small Mediterranean breeds, such as the Leghorn, have been developed primarily for egg production, and the American and English breeds fill the need for the combination of these two characteristics.

Emphasis on Production Types

Following the realization that too much attention has been paid by breeders to color and other exhibition characteristics, there was a reaction which placed the emphasis upon egg production and, to some extent, the development of the large type of rapidly growing breeds for meat production.

Many of the breeders were guilty of ignoring breed characteristics as some of the earlier fanciers had ignored economic qualities, and the buyer, in purchasing stock, could not tell whether he would get breeds that were of standard size, color or type, but only that he was getting a strain which had been selected for egg production. We feel that we have passed through that phase of breeding work and that there is now a general sentiment that we should get a combination of these characteristics, and the breeders are working toward this end.

Eliminating the Broody Hen

One of the direct results of early selection of the chicken for egg production was to decrease broodiness. This was particularly evident in those birds which were selected specifically for egg production with little regard for size of bird or meat type. It has been demonstrated by geneticists that broodiness is an inherited characteristic and that it is associated with lower annual egg production. Thus, one of the simple means of improving production of hatchery flocks is the elimination of as many of the broody hens as possible.

There is no longer the need for the broody hen that existed prior to the development of the hatchery industry. The hatcheryman is in a position to render distinct service to the flock owners, because the setting hen is out of production from 10 to 12 weeks during the period of the year when she would normally be producing at the highest rate if she were not used to incubate eggs and brood chicks.

Chick Mortality Decreased

Too, present practices have the effect of removing one of the sources of infestation with parasites or infection with communicable diseases when chicks are hatched and brooded artifically and away from all older stock. Records kept by various flock owners in Iowa a number of years ago show that chick mortality was decreased on the average some 23 per cent when artificial brooding and rearing and good sanitation were practiced in contrast to the hen hatching and brooding method. The geneticists have shown us that the broody hen can be eliminated from the flock by the simple process of selection and marking all broody birds with colored bands, or other means, in order that they may be removed from the breeding flocks before the breeding season.

It has also been found, in experimental breeding work, that the early maturing birds are the highest producers over the entire laying year. Selection for this factor alone is very likely to yield a strain of birds laying small eggs, but, when used judiciously, may be used to increase flock production to very good advantage.

Emphasis on Egg Production Record

The selection of chickens for egg production in the early days was highly successful. The emphasis on egg production was stimulated very decidedly by the production of the 300-egg hens which had long been the goal of the poultry breeders. When the feat was duplicated time after time and it was proven that a 300-egg bird was not a freak but rather the result of skillful and careful selection by the breeder, emphasis swung to the egg production record and, in many cases, to the egg production record exclusively. This was unfortunate because such vital factors as egg size, hatchability and body size of the bird were neglected.

We still have a carry-over from this period in one of our breeding programs as it has been outlined, in which the production of a specified

number of eggs is the chief consideration for the qualification of birds regardless of hatchability or family record. In this phase of specialized breeding, the records of all sisters are available, and also the records of all daughters of certain dams or sires. It is hoped that the breeders will be ready to take up these types of evaluating breeding worth in the not too distant future.

Egg Size a Hatchery Problem

Along with the increase in number of eggs produced per bird and in a number of 300-egg hens that were produced, there was, in many cases, a decrease in egg size. Many of our high producing birds produced eggs which we regard at the present time as too small to use for hatching for the production of breeding stock.

Geneticists are still working to discover just how egg size is transmitted genetically from parent to offspring. Here again much progress has been made in the improvement of egg size since the problem has been recognized. This is not to insinuate that all of our high producing birds are or have been producing small eggs, because there are many good flocks which are producing better than standard size eggs, but egg size is definitely a problem in hatchery work.

We must admit, to, that, in many cases, the breeder provides stock which is capable of much higher production than it actually attains because of defects in feeding and management. We have not been able to affect the egg size much by feeding, but Warren and his associates at Kansas State College have shown that extremely high temperatures will reduce egg size. Allowance must be made for this factor in determining the size of eggs produced by flocks or by individual females, but, other than this, it appears that egg size (or lack of it) is controlled quite largely by breeding.

We can hardly say the same for the number of eggs, because until we can give our flocks a feed which is complete in all essentials for egg production (which we are not sure that we are doing at the present time) and until we can provide the optimum environment for the laying flocks, we will not be able to get the maximum production of which the birds that our breeders are supplying us with are capable. There is still much room for improvement in the inherent egg producing ability of our stock, but we must also learn to make the most of what we have. In regard to egg production then, we can expect breeding to increase still further the rate of production of our flocks.

Development of Sex-linked Poultry

Another contribution of breeding to the poultry industry has been the development of the knowledge of sex-linkage and the use of this knowledge in producing chicks which may be identified as to sex at hatching time by differences in down color or in rate of feathering. While this method is not as important as it would have been had the cloacal method of sex determination not been discovered and developed, it can be used with a high degree of accuracy.

I am referring, of course, to such matings as the Rhode Island Red or New Hampshire male and the Barred Plymouth Rock female. The male chicks resulting from this cross carry white spots on the top of their heads at hatching time and later develop barred plumage, whereas the female is all black in down color and remains black when the plumage is developed. There are, of course, many other crosses which may be made using not only barring, but the gold and silver crosses and others.

Breeds that are auto sex-linked have been developed, that is, those which carry a difference in the down color in the two sexes at hatching time, but which breed true within the breed, such as the Cambars developed by Dr. Punnet, and the Oklabars developed by Dr. Jaap. I understand that Dr. Lamoreux is working with still another breed in which sex may be distinguished at hatching time.

Then there is another field which has received more attention recently and which is a very important one in combating the problem of mortality in our poultry flocks. This is the problem of breeding for disease resistance. It seems that it has taken quite a long time for all of us to realize that the ability to live may be influenced by heredity.

Resistance to Pullorum Disease

Roberts and Card at the Illinois station found that eggs from certain hens were much more resistant to pullorum than were those from other hens. They have been able, over a period of years, to develop a strain which is quite resistant to pullorum.

Lambert and Knox, of the Iowa station, also demonstrated that strains of Single Comb White Leghorns could be developed which would be much more resistant to injections of the organism which causes fowl typhoid. These workers found that resistance was transmitted to the progeny by both sire and dam and they were able to develop strains which were resistant, as well as others which were more susceptible to the disease.

Fowl Paralysis Control

Gidlow, Williams and Lampman working at the Idaho station, Biely, Palmer, Lerner and Asmundson and Asmundson and Biely at British Columbia, Upp and Tower at the Louisiana station and Wilcke, Lee and Murray at the Iowa station and others have all demonstrated the development of resistance to the fowl paralysis complex.

It is doubtful whether the full significance of this work was recognized immediately, but it has been of far reaching importance because it has given us a means of reducing the loss from fowl paralysis, the disease which probably accounts for more of the adult mortality than any other single disease.

In the case of the Iowa work with which, of course, I am more familiar, the work in the selection of both resistant and susceptible strains of Single Comb White Leghorns developed as a result of observations that the progeny from certain dams exhibited more resistance to injection to the causative agent of fowl paralysis than did the chicks from other dams. It was possible to show difference in strains by selection for resistance and susceptibility over a period of two or three generations. This work is being continued and it is hoped that fully resistant and fully susceptible strains can be developed. The resistant strain being of immediate practical importance and both the resistant and susceptible strains being needed for experimental work which will determine eventually the exact cause of this disease, we hope that additional methods of prevention may be developed.

Now that the Regional Laboratory at East Lansing has been established for the purpose of combating diseases in our poultry flocks, and particularly to find a means of controlling fowl paralysis, we may expect more rapid progress along this line.

Improving Livability

The work that we have been discussing has demonstrated the possibility of developing strains which are resistant to specific diseases. The question has naturally arisen as to whether strains can be developed that are resistant not only to one disease but to all diseases. In other words, whether strains can be developed that will live better than those that we have had in the past.

Such work has been done by Marble and others at the Pennsylvania station. They have been able to demonstrate a constant increase in the percentage of laying birds that will go through a complete year of egg production. This increase has been a result of selection on a family basis which, of course, can be practiced only by breeders who have trapnest records on their birds. Since these results can be accomplished by selection on the family basis, there is reason to believe that progress will be made in this direction, more slowly to be sure, by the simple practice of culling breeding flocks very rigidly to remove any birds of low vitality or birds that exhibit noticeable symptoms of diseases.

In view of the striking results that have been obtained by breeding for resistance, there is again some danger that this technique may be carried to extremes and that there may be a tendency on the part of some to fail to observe other practices such as sanitation, proper feeding and proper management, expecting to control all death loss through breeding.

We must learn in this respect that the problem of fixing genes for characters is at best a slow one. While we will all agree that we would like to have the breeder develop for us strains of poultry which would never die except by slaughter, yet I think we will all agree that the development of such strains is in the far distant future. We must remember that the development of resistance by breeding is a means of reducing death loss and not of the elimination of the disease.

Building Up Immunity

There are also those who feel that chicks or the adult flock should be exposed to disease in order that the resistance may be determined. This is a good experimental procedure but hardly one that could be recommended to a hatcheryman and his hatchery flocks, because few hatchery flock owners and few hatcherymen can afford to take the chance of losing a large proportion of a flock simply to find out whether the birds would die if they contracted a specific disease.

Again, while it has been demonstrated that it is possible to develop resistance to pullorum by breeding, we have other methods of reducing the death loss from this particular disease which operate much more rapidly and which are quite effective in control. Until resistant strains can be produced in commercial quantities, it will be necessary to use pullorum testing and rigid sanitation to control that particular disease.

This is simply one example of the application of these important problems in breeding. Then, too, the hatcheryman or the breeder would hardly care, at this stage of the work, to take full responsibility for all death loss in flocks due to the disease. There is certainly a possibility that the purchaser may take that attitude if this phase of the question is over-emphasized.

A BANTAM rooster belonging to Mrs. J. W. Mashburn, Rochelle, Ga., sounds the alarm whenever an airplane passes overhead, and 200 chickens in the yard scurry for cover, according to a news item. The chickens emerge from hiding when the drone of the plane's motor disappears.

TORCHES or other artificial lights were used in Spanish poultry houses as far back as 1803, so that birds would eat more in winter.
—Veterinary Medicine, September, 1940.

Problems Met by Egg Marketing Co-ops

By C. G. McBRIDE and R. L. BAKER
Ohio Agricultural Experiment Station

Reprinted from Ohio Bimonthly Bulletin

MANAGERS of cooperatives handling poultry and eggs were asked in a recent survey to list the most pressing problems met in marketing these commodities. Replies showed a segregation around three points: (a) obtaining adequate volume of high-quality product, (b) seasonal variation of receipts from producers, and (c) competition in both buying and selling. There are many angles to these three main problems, and they differ with local conditions.

Getting Sufficient Volume

The volume of quality poultry and eggs available to a cooperative association depends greatly upon the character of poultry production in the area in which it operates. It was found that a larger percentage of eggs fell into the higher grades in cooperatives where there was a considerable percentage of commercial poultrymen and large farm flocks.

Method of payment for eggs has some influence upon the quality delivered. The more directly the returns to the producer are correlated with the quality of produce delivered, the greater is the incentive to improve quality. In several of the cooperative associations studied, producers were encouraged to be present when their eggs were being candled and graded. In two, no producer could receive a certificate of membership until he had watched a consignment of his eggs go through the grading process.

Eliminating Variations in Receipts

The second problem stressed was that of irregularity of receipts. Seasonality of volume was found to be definitely correlated with the type of production. In areas where farm flocks were large and there was a considerable number of commercial flocks, the flow of eggs to market was much more even than in areas of small farm flocks. This result is shown in table 1, in which receipts at seven associations are grouped on the basis of small and large flocks. The percentage range by months from the daily average for the year was 37.13 to 220 in the small-flock area, and from 86.51 to 116.03 in the area of large flocks.

In the small-flock area, the receipts of the high month were 593 per cent of the low month, whereas in the large flock area they were 134 per cent.

Ohio Agricultural Experiment Station, Wooster, Ohio
(The Bimonthly Bulletin, May-June, 1940)

In the period of the year when eggs are coming to market in heaviest volume, there are three outlets into which they go: current consumption, hatching, and storage. The cooperatives are most concerned with the market for eggs going into current consumption. So far, little effort has been made to deal in eggs for hatching. Some of the buyers, especially at the auctions, buy eggs for storage, but the amount of storing by cooperatives for their own account was found to be very limited. A small amount of storing was done to enable the association to render better service to its regular customers, and not for speculation.

Volume is also influenced by the extent to which the cooperative can depend upon all its members to deliver all poultry and eggs for sale through the cooperative. At present, there are no binding contracts for delivery of all products being enforced. In the beginning, several associations required the member to sign such a contract. A few attempts at legal enforcement were made, but, at the time of the survey, no association was attempting to force delivery on any producer-marketing agreement.

Auction buyers want reasonable assurance that they can depend upon having their requirements filled each week if they pay the prevailing competitive market price.

Meeting Competition

The third problem facing cooperative management was that of competition. In many respects, this appeared to be the most difficult. Some of the associations entered the field merely as another buyer of eggs and poultry at current prices. They were performing the same services of assembling and selling run-of-the-farm eggs as any private huckster or storekeeper. In these cases, the competitive problem narrowed down to the matter of paying local current prices and then selling so as to make a margin of profit. Many times, this proved to be a difficult thing to do.

Table 1.—Monthly volume of eggs handled by four cooperatives operating in an area in which small flocks predominated, and by three cooperatives operating in an area in which large flocks predominated, 1938.

	Small-flock area			Large-flock area		
Month	Total cases	Cases per day	Per cent of daily average for year	Total cases	Cases per day	Per cent of daily average for year
January	692	22.32	75.82	7,362	237.48	105.92
February	915	32.68	111.00	6,285	224.46	100.11
March	1,355	43.71	148.47	6,839	220.61	98.39
April	1,943	64.77	220.00	6,569	218.97	97.66
May	1,414	45.61	154.93	7,059	227.71	101.56
June	1,181	39.37	133.73	6,845	228.17	101.77
July	836	26.97	91.61	6,585	212.42	94.74
August	734	23.68	80.43	6,013	193.97	86.51
September	543	18.10	61.48	5,987	199.57	89.01
October	404	13.03	44.26	6,784	218.84	97.60
November	328	10.93	37.13	7,445	248.17	110.69
December	400	12.90	43.82	8,065	260.16	116.03
Total or average ...	10,745	29.44	......	81,838	224.21	......

The cooperatives that graded the product, and undertook to pay patrons on the basis of quality, faced more complex problems in competition. Instead of announcing a single price for eggs or poultry, it was necessary for them to announce a price for each grade. Without a complete record of distributions into grades, it was impossible to tell what any individual producer got for all eggs delivered. Obviously, the lower grades were sold at low prices, and unscrupulous competitors sometimes quoted these lower prices in such a way as to give the impression that they were the prevailing prices received by producers.

Another form of competition induced by selling on grades was the effort on the part of local buyers to wean away from the cooperative a few of the best producers and then use them as examples to prove that good poultrymen did not find it profitable to sell through a cooperative association.

On the selling side, the cooperative also meets stiff competition. Ohio cooperatives have found selling competition especially keen when the product was graded, and it was necessary to create an appreciation of eggs of a dependable standard of quality. Much of the pioneering for quality appreciation among consumers was done by the cooperatives in Ohio. The result has been that non-cooperative agencies have taken on the sale of Federal-State graded eggs, and this result has meant, in turn, keener competition for the cooperatives.

The competitive situation has run true to form in Ohio. If a cooperative were formed to correct a bad price situation, after a few months of operation, the general level of competitors' prices had come up to approximately the level of the cooperative. Some cooperatives were able to continue under this price situation, while some, because of defection of members, failed. In similar manner, the competitors in the selling end of the market have moved up to meet whatever the cooperatives offered in better quality or service. The net result has been good from the standpoint of both consumer and producer. The consumer has been able to get a better quality egg, and the producer has been rewarded for marketing a better product.

❧ WHEN a chicken hawk swooped into the hen house of Mrs. C. L. Long, Charlottesville, Va., just as she entered the chicken yard, she slammed the door, donned gloves and caught the hawk alive.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens Per Flock, and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Eggs per flock		
	Jan. 1	Sept. 1	Oct. 1	Sept. 1	Oct. 1	Aggregate Jan.-Oct.	Sept. 1	Oct. 1	Aggregate Jan.-Oct.
North Atl.									
1929-38 (Av.)	96.9	73.6	80.4	38.9	28.5	431	28.7	22.8	364
1939	98.4	70.7	78.6	41.8	33.3	464	29.5	26.1	386
1940	97.2	74.1	79.2	41.9	33.8	462	31.1	26.6	384
E. N. Cent.									
1929-38 (Av.)	108.8	77.7	83.8	35.4	26.3	394	27.8	22.2	368
1939	107.3	77.6	85.3	37.5	28.2	426	29.3	24.2	392
1940	110.8	79.1	85.8	37.4	30.9	421	29.8	26.6	397
W. N. Cent.									
1929-38 (Av.)	118.8	83.2	90.8	31.8	24.4	361	26.4	22.0	367
1939	113.1	80.5	87.3	35.6	25.3	399	28.6	22.1	389
1940	118.6	82.5	88.2	36.9	28.0	393	30.4	24.7	402
South Atl.									
1929-38 (Av.)	58.9	46.2	49.8	30.8	25.0	374	14.0	12.4	190
1939	59.9	46.5	50.3	34.1	28.8	408	15.4	14.5	205
1940	59.9	47.4	51.1	35.3	29.0	400	16.3	14.6	208
South Cent.									
1929-38 (Av.)	65.0	49.5	54.7	27.5	24.0	358	13.7	13.2	199
1939	63.6	50.8	56.4	30.8	24.1	384	15.3	13.7	215
1940	65.8	49.3	53.7	31.4	27.4	372	15.4	14.7	206
Western									
1929-38 (Av.)	73.2	58.8	61.4	38.9	30.8	431	23.0	18.9	279
1939	72.6	56.8	62.2	39.9	32.2	446	22.7	19.8	281
1940	73.7	57.5	61.0	39.3	34.0	449	22.8	20.3	284
United States									
1929-38 (Av.)	84.5	62.5	67.9	33.0	25.8	383	20.3	17.4	276
1939	82.8	62.1	68.0	36.0	27.5	414	21.7	18.5	293
1940	85.1	62.6	67.5	36.6	29.8	408	22.5	19.8	294

Egg production during September was the largest for the month since 1926, being estimated at 2,504 million eggs, compared with 2,356 million during September of last year—an increase of about 6 per cent. September output also exceeded the 10-year (1929-38) average by about 9 per cent. The seasonal decline from August to September was about 14 per cent compared with the average of about 17 per cent.

The aggregate total production of eggs for the 9 months, January to September inclusive, was 32,633 million, an increase of about 2 per cent over the production for the same months in 1939, and about 4 per cent over the 10-year average. The gain in egg production over September 1939 was 9 per cent in the West North Central, 7 per cent in the South Atlantic, 6 per cent in the North Atlantic and Western areas, 5 per cent in the East North Central and 4 per cent in the South Central area.

The average rate of production per layer during September was 9.73 eggs compared with 9.29 eggs in September of last year and the 10-year (1929-38) average of 8.90 eggs. The rate of lay this year was the second highest of record for September, the record high being 9.86 eggs in 1937.

The September rate was above that of last year in all parts of the country. Compared with the 10-year average, the rate was higher in all geographic areas with the exception of the Western States where it was about equal.

Farm flocks during September carried an average of 257,345,000 layers, which is about 2 per cent more than in September last year, and about equal to the 10-year (1929-38) average. The seasonal decline in average number of layers on hand from January to September was about 22 per cent this year compared with about 21 per cent in 1939 and the 10-year average of 23 per cent.

With more than the usual seasonal increase in egg prices and with only a small increase in feed prices, the feed-egg ratio during September was more favorable. In view of the continued high egg production and the favorable ratio between feed and poultry products, farmers are expected to market fewer layers than usual during the remainder of the year.

Sample farm flock reports on October 1 showed a gain of about 8 per cent over numbers on September 1, compared with a 10 per cent gain last year and a 10-year average gain of about 9 per cent.

—Comment from U. S. D. A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

September receipts of eggs at the four markets, New York, Chicago, Philadelphia, and Boston, were only about 2 per cent heavier than in September 1939, but a sharp pick-up occurred after October 1, and October receipts, compared with the corresponding period of last year, have shown increases of over 15 per cent. Seasonal decreases are not as great as they were earlier in the fall, and this factor has probably borne some relation to current production and marketings. September egg production was reported to have been the largest for that month since 1926, and about 6 per cent larger than last year. The number of pullets not yet of laying age on October 1 was about 6 per cent less than last year, indicating a smaller average number of layers during the remainder of the year. Marketings of eggs through Central West country packing plants, which in early September averaged about 15 per cent more than a year earlier, were about 70 per cent heavier by the middle of October. At plants on the Pacific Coast, receipts have been averaging 8 to 10 per cent below those of a year earlier since the first of August. A recent release of the Bureau of Agricultural Economics states that supplies of eggs during the first half of next year will probably be 3 to 4 per cent smaller than in the first half of 1940.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Receipts of Eggs (Cases) at 4 Markets*

	September			Jan. to Sept., Inc.		
Geographic Section	1940	1939	% change	1940	1939	% change
New England	33,623	31,856	+ 5.5	350,794	284,442	+ 23.3
Middle Atlantic	110,807	117,427	– 5.6	1,695,144	1,597,140	+ 6.1
South Atlantic	11,418	11,946	– 4.4	224,139	235,778	– 4.9
East North Central	112,964	100,828	+12.0	2,559,406	2,372,440	+ 7.9
West North Central	411,452	393,180	+ 4.6	6,746,377	6,832,557	– 1.3
South Central	338	1,053	–67.9	74,833	55,157	+ 35.7
Mountain	21,667	21,077	+ 2.8	302,475	226,567	+ 33.5
Pacific	33,846	46,563	–27.3	345,596	272,685	+ 26.7
Miscellaneous	270	276	– 2.2	4,185	4,195	– 0.2
TOTAL	736,385	724,206	+ 1.7	12,302,949	11,880,961	+ 3.6

Receipts of Dressed Poultry (Pounds) at 4 Markets*

New England	1,677,698	897,151	+87.0	11,325,691	10,189,536	+ 11.2
Middle Atlantic	5,048,841	4,211,352	+19.9	39,389,228	33,233,931	+ 18.5
South Atlantic	1,816,855	1,534,836	+18.4	19,942,992	13,501,436	+ 47.7
East North Central	3,560,305	3,058,962	+16.4	26,659,988	27,778,064	– 4.0
West North Central	19,685,464	18,152,382	+ 8.4	113,684,400	95,766,270	+ 18.7
South Central	924,396	769,370	+20.1	13,250,886	14,195,482	– 6.7
Mountain	155,670	177,859	–12.5	3,599,669	2,947,332	+ 22.1
Pacific	495,898	760,957	–34.8	10,585,232	6,123,081	+ 72.9
Miscellaneous	–	–	–	128,680	34,117	+277.2
TOTAL	33,365,127	29,562,869*	+12.9	238,566,766	203,769,249	+ 17.1

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs			Pounds of Poultry (000 omitted)			Pounds of Young Stock (000 omitted)			Pounds of Fowl (000 omitted)		
	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg
Oct. 5	35,170	22,878	+53.73	6,536	5,891	+10.96	3,971	3,414	+16.31	2,476	2,338	+ 3.68
Oct. 12	33,464	19,429	+72.24	7,228	5,459	+32.41	4,178	3,235	+29.14	2,949	2,148	+37.28
Oct. 19	29,005	17,140	+69.22	6,896	5,868	+17.51	4,022	3,501	+14.88	2,738	2,256	+21.36
Oct. 26	25,341	17,782	+42.51	6,421	6,502	– 1.24	3,479	3,657	– 4.87	2,846	2,754	+ 3.34

—Compiled from U. S. D. A. Market Reports.

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	1940	1939	% Change from Previous Week	% Change from Last Year
October 5	60	48,135	52,766	–1.81	–8.78
October 12	50	48,676	53,010	+2.00	–8.00
October 19	60	47,809	52,128	–0.68	–8.29
October 26	60	49,334	53,894	+1.16	–8.46

—Compiled from U. S. D. A. Market Reports.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
October 5	26	21,898	–2.60	+4.96
October 12	31	30,098	–1.84	+2.18
October 19	30	28,347	–1.37	+4.50
October 26	29	27,855	+0.02	+5.90

—Compiled from U. S. D. A. Market Reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1939	1938
October 4	6.5	7.1	4.4	.288	.26	.347	2.07	2.21	1.73
October 11	6.2	6.5	4.2	.305	.281	.361	2.07	2.12	1.70
October 18	6.1	5.8	4.1	.31	.317	.366	2.04	2.13	1.69
October 25	6.1	6.1	4.4	.316	.299	.35	2.10	2.13	1.76

—Compiled by N. Y. State Department of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-yr. Avg. 1929-38	1940	1939	1940	1939
October 5	6.17	6.10	5.04	.197	.183	1.218	1.16
October 12	6.19	5.79	4.90	.197	.190	1.222	1.10
October 19	6.21	5.29	4.76	.200	.207	1.245	1.09
October 26	5.95	5.13	4.62	.213	.208	1.27	1.06

—Compiled from U. S. D. A. Market Reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1940	1939	1938	1937	1936	1935
September	5.66	5.79	4.68	6.16	6.98	5.05
January-September	8.70	7.31	7.23	9.17	7.39	6.88
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

Substantial price advances on the better quality grades of eggs occurred during October. Government graded U. S. Extras at such markets as Washington, Baltimore, and Pittsburgh gained about 3 cents, and similar increases apply also to top grades of nearby eggs and Pacific Coast eggs on the New York market. At Chicago, the local grade of Extra Firsts has advanced 5 cents compared with only a 2 cent advance on Firsts. On the Pacific Coast, top grades are 3 to 4 cents higher than a month ago, except at Los Angeles, where they are approximately the same. Prices in Los Angeles advanced toward the middle of October, but later lost all of this gain. On the Chicago Mercantile Exchange, future contracts for November and December deliveries of Refrigerator Standards have declined ½ to ¾ cent since October 1.

1940 Egg Prices at New York City

Kind	Oct. 4	Oct. 11	Oct. 18	Oct. 25	Oct. 25, '39
Mixed Color Firsts	21½	21¾	22	23½	21½
Nearby and Midwestern White Premium Marks	34½-37	34½-37	36-38½	37-39½	34½-37
Nearby and Midwestern White Specials	34	34	34½-35½	36½	33-34
Pacific Coast Specials	37½-38	39-41	40-40½	41-41½	38½-39
Nearby and Midwestern Brown Exchange Specials	29	30	31	33	30

Mid-Month Farm Prices of Eggs Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	19.9	23.2	26.2	30.1	28.8
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4	16.4	17.2	21.0			

Eggs in Storage

Total U. S. stocks of eggs in storage on October 1 were 6,039,000 cases. On the same date in 1939, holdings were 5,430,000 cases, or an increase of over 600,000 cases. The current year's total, however, included 901,000 cases held by the Surplus Marketing Administration and state agencies for relief purposes, so that commercial stocks on that date totaled only 5,138,000 cases. Thus, insofar as eggs owned by the trade are concerned, there was actually a reduction of approximately 300,000 cases. Weekly reports covering 35 cities show that the total out-of-storage movement since October 1 has been about 8 per cent lighter than last year's reduction during the corresponding period. When allowance is made for non-commercial stocks, however, the reduction is 12 per cent less than that during October 1939. Again, considering commercial stocks only, these are still lower than a year ago, although not by as large an amount as on the first of the month.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Storage Holdings of Eggs

Kind	Oct. 1 5-Year Avg. 1935-39	Oct. 1 1939	Sept. 1 1940	Oct. 1 1940	% Change Oct. '39-Oct. '40
		(Thousands)			
Shell Eggs (cases)	5,885	5,430	7,241	6,039**	+11.0
Frozen Eggs (lbs.)	115,049	121,471	145,653	130,621	+ 7.5
Frozen Case Equivalent (cases)*	3,287	3,471	4,162	3,732	+ 7.5
Total (cases)	9,172	8,901	11,403	9,771	+ 9.7

* Frozen eggs are converted on the basis of 36 pounds to the case.

** Includes 900,915 cases owned by the Surplus Marketing Administration for relief distribution.

Poultry Meat Prices

Mid-Month Farm Prices of Chickens Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	14.9	15.2	14.6	14.1	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3	13.6	13.4	13.7			

Prices of live poultry on the principal markets have declined slightly during October. Indications of heavier marketings are found in the reports of receipts at Central West Packing plants. Weekly increases were reported regularly from the middle of August until the week ending October 19, when there was a 4 per cent decrease under the preceding week. The comparison with corresponding weeks of 1939 during practically all of this period shows substantial increases, but particularly so during the current month. Young stock has been constituting 60 to 70 per cent of these receipts lately.

Prices of live poultry have declined in most markets, although in many cases the declines are not large. Broilers have advanced slightly at Chicago, but this is the reverse of what has happened in the eastern markets. Jewish holidays accounted for slow trading during part of the month.

According to a Bureau of Agricultural Economics report, turkey prices during the fall and early winter months are expected to average about the same or slightly lower than those of last year during the corresponding period. This season's turkey crop is estimated at slightly greater than last year, and marketings are expected to be earlier. Storage stock of turkeys on October 1 were 15,344,000 pounds. This is almost a 100 per cent increase over a year earlier, but it is to be remembered that there was a tremendous carryover this year of turkeys from last season. On that date, the total reported was 65 million pounds, compared with but 28 million pounds a year earlier.

Poultry in Storage

Storage Holdings of Poultry

Kind	Oct. 1 5-Year Avg. 1935-39	Oct. 1 1939	Sept. 1 1940	Oct. 1 1940	% Change Oct. '39-Oct. '40
	(Thousand Pounds)				
Broilers	11,479	9,025	6,247	8,317	− 7.9
Fryers	4,506	3,748	2,539	6,066	+61.8
Roasters	6,172	6,716	3,365	6,844	+ 1.9
Fowls	10,725	11,095	19,807	21,974	+98.0
Turkeys	6,248	7,994	21,090	15,344	+91.9
Ducks	8,256	10,005	11,034	11,637	+16.3
Miscellaneous	13,942	14,581	12,350	13,483	− 7.6
Unclassified			5,746	6,781	
Total	61,328	63,164	82,178	90,446	+43.1

Stocks of all classes of poultry in storage were 90½ million pounds on October 1, compared with 63 million pounds a year earlier. The current year's October movement in the 35 cities is a slightly heavier increase than occurred in October last year, and stocks are still between 40 and 50 per cent larger than a year ago.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Hatchery Operations

Eggs Set, Chicks Hatched, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During September			Salable Chicks Hatched During September			Chicks booked Oct. 1 for Oct. or later delivery			
		1939	1940	% Chg.	1939	1940	% Chg.	No. of Plants	1939	1940	% Chg.
		Thousands			Thousands				Thousands		
N. Eng.	14	1,493	1,127	−25	969	723	−25	5	1,510	1,798	+ 19
Mid. Atl.	9	579	549	− 5	345	316	− 8	3	122	84	− 31
S. Atl.	23	827	936	+13	557	566	+ 2	7	932	1,140	+ 22
E. N. Cent.	26	696	614	−12	442	342	−23	10	192	444	+131
W. N. Cent.	88	310	301	− 3	242	173	−29	2	13	8	− 38
S. Cent.	8	143	191	+34	79	112	+42	2	8	8	0
West	22	650	614	− 6	438	376	−14	15	602	538	− 11
U. S.	110	4,698	4,332	− 8	3,072	2,608	−15	44	3,379	4,020	+ 19

Egg Breaking Operations

Egg Breaking Operations During September, 1940

Commodity		Quantities reported to date for Sept. 1940	Same Firm Comparison		
			Sept. 1939	Sept. 1940	% change in 1939
		Pounds	Pounds		Per cent
Whole eggs (nothing added)		925,971	713,529	925,971	+ 30
Mixed eggs (plain)		224,435	311,320	224,435	− 28
Mixed eggs (emulsions, also with sugar, salt, etc.)		36,105	38,875	36,105	− 7
Egg whites (all descriptions)		281,271	627,836	281,271	− 55
Egg yolks packed	Without salt, sugar, etc.	57,148	392,186	57,148	− 85
	With sugar	212,810	69,245	212,810	+207
	With salt	16,095	111,000	16,095	− 86
	All yolk emulsions, including glycerine	0	0	0	
Total—pounds		1,753,835	2,263,991	1,753,835	− 23
Total—case egg equivalent		50,110	64,686	50,110	
Number of firms reporting*		29	29		

* Firms, not plants. Some firms operate more than one plant.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		September		Jan. to Sept., Inc.	
		1940	1939	1940	1939
Eggs in shell	(doz.)	227,094	240,295	3,593,248	1,887,380
Eggs and Yolks, frozen, dried or canned	(lbs.)	14,185	Not available	127,189	Not available
Live Poultry	(lbs.)	4,983	8,362	87,036	114,786
Dressed Poultry	(lbs.)	85,973	201,081	1,086,985	1,945,261

Imports of Eggs and Poultry

Commodity		September 1940	September 1939	Jan. to Sept., Inc. 1940	Jan. to Sept., Inc. 1939
Eggs in shell	(doz.)	18,865	19,158	160,554	224,052
Whole eggs, dried	(lbs.)	11,700	5,000	40,950	10,500
Whole eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	380,000	141,450	1,727,765	447,175
Yolks, frozen	(lbs.)	420	0	420	25,330
Egg albumen, dried	(lbs.)	33,200	50,000	249,800	387,283
Egg albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	124,393	67,687	1,039,320	559,187
Dressed Poultry	(lbs.)	6,180	16,099	308,963	141,577
Poultry, prepared	(lbs.)	3,050	29,073	230,725	629,269

CARROTS are used by Otto F. Weber, Petaluma, Calif., in feeding culls from his flock of 16,000 Leghorns. There is no danger of feeding hens too many carrots, says Mr. Weber in the Pacific Rural Press. He throws as many as 30 to 40 pounds of carrots to 1,000 hens and lets them do their own shredding. That may keep them out of other mischief.

Physical Measurements of Eggs Related to Cake Baking Qualities

Recent tests have shown that, when the eggs of an individual hen are used, the agreement between physical measurements of egg quality and baking behavior is exceedingly high in approximately 90 per cent of the cases.

Evidence gained by W. E. Pyke and Gestur Johnson of the Colorado Experiment Station shows that storage at room temperature for 20 days reduces the ability of eggs to contribute structural strength to 52 per hent of that of high quality fresh eggs. Poor quality eggs whip up more rapidly than do high quality eggs, but when yellow sponge cake batters from the two types of eggs are brought to a standard specific gravity before baking, the volume, texture, and quality of the cakes from high quality eggs are definitely superior.

Because low quality eggs do not have the strength-producing qualities for cake baking that high quality eggs have, their use at low altitudes will meet with greater success than will their use at higher altitudes, says the report in Poultry Science, Vol. 19, No. 5.

◀◀ INSTEAD of going to a beauty parlor, a Des Moines, Iowa, woman decided to give herself a rum and egg shampoo. According to an item in the Des Moines Tribune, she worked the rum and eggs into a lather in her hair, and ducked her head into hot water. But the water was so hot it cooked the eggs. The lady hurried to her hairdresser's to have the eggs removed.

◀◀ A HEN wedged between two boards at the Gilman Pike farm, Wellington, Maine, existed for five weeks, says a report in the New England Poultryman. Mr. Pike, making repairs on a building, found the hen alive, firmly wedged between two boards. The hen had picked all the feathers within reach, and appeared to be in pain so Pike killed her.

◀◀ COCK OF THE WALK—that's what W. D. McCollum's game rooster thought he was after he toured his Rochelle, Ga., neighborhood and whipped every rooster in sight. He came home, mounted the well curb and started to crow. Then, seeing his shadow in the water below, he jumped for his next victim, only to drown before his owner could fish him out, says a newspaper report.

◀◀ ACCORDING to a pupil at a State Agricultural College, there are four kinds of poultry farm management: Pretensive, Extensive, Intensive and Expensive. It depends upon the operator which method he follows.

—Australasian Poultry World, August 1, 1940.

RESULTS OF LAYING TESTS

Here's the new all-time high pen record established by J. A. Hanson's White Leghorns at Storrs during the 1939-40 test run: 4041 eggs and 4283.25 points for an average of 310.84 eggs and 329.48 points per bird. And each of the 13 birds in this team was living and going strong at the end of the 51 weeks.

E. B. Parmenter's Rhode Island Reds at the Rhode Island Test were tops among all heavy pens for the year.

J. A. Hanson's White Leghorn hen and E. B. Parmenter's Rhode Island Red hen tied for highest individual honors with 368.95 points each, but the Leghorn hen shelled out 343 eggs, compared with 340 eggs for the Red hen, thus giving Hanson the blue ribbon.

New all-time high pen records occurred this year among White Leghorns, Barred Rocks, White Rocks, White Wyandottes, Black Minorcas, Columbian Rocks, Brown Leghorns and Leghorn Crossbreds.

The 1940 Poultry Tribune Trophy for highest average production, counting all of the birds of one breed which one breeder has in all standard tests, was won by E. B. Parmenter. A total of 51 breeders were eligible to compete for this trophy in 1940 by having five or more pens of a single breed entered.

The 1940 Poultry Item Trophy, based on the record of the five highest pens entered by any breeder in U. S. standard laying tests, whereby mortality is automatically penalized, was won by J. A. Hanson. Sixty-five breeders competed for this trophy this past year.

Twenty Highest Pens, All Breeds, for the Year

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	4041	4283.25	Storrs
J. A. Hanson	White Leghorn	3658	3893.05	Storrs
Wm. L. Gilbert Home	White Leghorn	3663	3882.35	Storrs
Erath Egg Farm	White Leghorn	3627	3852.15	Texas
Horseshoe Poultry Ranch	White Leghorn	3711	3832.85	Texas
E. B. Parmenter	Rhode Island Red	3444	3741.70	Rhode Island
Norman W. Amidon	Barred Rock	3557	3694.60	Pennsylvania
H. J. Hardin	Rhode Island Red	3465	3683.15	Georgia
A. E. Guinn	White Leghorn	3588	3650.50	Georgia
R. C. Cobb	Barred Rock	3505	3644.35	Storrs
Alampi Poultry Breed. Farm	Rhode Island Red	3385	3634.95	Passaic, N. J.
Ralph W. Anderson	Rhode Island Red	3415	3630.55	Storrs
To-Lani Farm	Rhode Island Red	3588	3623.55	Georgia
George M. Heberer	White Leghorn	3466	3617.35	Texas
Kauder's Pedigreed Leghorn	White Leghorn	3393	3616.40	Storrs
Thomas Mettler	Rhode Island Red	3444	3608.90	Hunterdon, N. J.
Guy A. Leader	White Leghorn	3413	3583.55	Storrs
George A. Pearce	White Leghorn	3381	3580.00	Hunterdon, N. J.
Kauder's Pedigreed Leghorns	White Leghorn	3338	3561.80	Storrs
Thomas Mettler	Rhode Island Red	3386	3557.95	Passaic, N. J.

High Pen in Each Standard Test for the Year

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	4041	4283.25	Storrs
Erath Egg Farm	White Leghorn	3627	3852.15	Texas
E. B. Parmenter	Rhode Island Red	3444	3741.70	Rhode Island
Norman W. Amidon	Barred Rock	3557	3694.60	Pennsylvania
H. J. Hardin	Rhode Island Red	3465	3683.15	Georgia
Alampi Poultry Breed. Farm	Rhode Island Red	3385	3634.95	Passaic, N. J.
Thomas Mettler	Rhode Island Red	3444	3608.90	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	3293	3548.10	New York State
W. C. Eckard	White Leghorn	3313	3541.70	Michigan
Ford's Riverbank Farm	Rhode Island Red	3370	3504.10	Maine
A. E. Danish	White Leghorn	3329	3484.70	Central New York
E. B. Parmenter	Rhode Island Red	3265	3442.55	Western New York
Becker's Ravenswood Farm	White Leghorn	3157	3375.40	Florida
Lindstrom Poultry Farm	White Leghorn	3196	3373.10	Oklahoma
J. J. Warren	Rhode Island Red	2998	3272.95	Missouri
W. A. Seidel	White Leghorn	3094	3258.60	Arizona

High Pen in Each Standard Test for September

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	222	243.05	Storrs
Horseshoe Poultry Ranch	White Leghorn	193	206.60	Texas
J. Hunting Otis	White Leghorn	190	203.65	Western New York
P. S. Dickey	White Leghorn	191	198.20	Arizona
A. E. Guinn	White Leghorn	184	193.15	Georgia
John J. Coleman	White Leghorn	176	191.05	Passaic, N. J.
Rinker Poultry Farm	White Leghorn	175	188.20	Pennsylvania
Elk City Hatchery	White Leghorn	175	184.10	Oklahoma
Content Farms	White Leghorn	174	183.60	Central New York
Plainview Poultry Farm	White Leghorn	170	182.10	Florida
John A. Clear	White Leghorn	172	181.25	Hunterdon, N. J.
W. C. Eckard	White Leghorn	162	177.65	Michigan
Crooks Farm	Rhode Island Red	165	175.05	New York State
Hill Hatchery	White Leghorn	153	166.55	Missouri
Foster Jameson	Barred Rock	149	160.20	Maine
Kalerok Farm	White Rock	147	159.45	Rhode Island

High Pen in Each Breed for the Year—(51 Weeks)

Owner	Breed	Eggs	Points	Test
J. A. Hansen	White Leghorn	4041	4283.25	Storrs
E. B. Parmenter	Rhode Island Red	3444	3741.70	Rhode Island
Norman W. Amidon	Barred Rock	3557	3694.60	Pennsylvania
Joachim Breeding Farm	New Hampshire	3261	3535.90	Storrs
Riley Poultry Farm	White Rock	3135	3264.70	Oklahoma
Harvey E. Taylor	White Wyandotte	3203	3244.25	Texas
Raymond S. Thomas	Ancona	2858	2881.45	Pennsylvania
Laclede Hatchery	Black Australorp	2712	2690.70	Oklahoma
E. J. Covey	Black Minorca	2346	2438.60	Texas
T. D. Brown	White Minorca	2227	2336.30	Texas
Raymond Murphy	White Giant	2134	2258.80	Missouri
Henry F. Waitt	Buff Minorca	2094	2090.60	Maine
Harry L. Phillips	Columbian Rock	1938	2071.65	Missouri
Ward's Poultry Farm	Buff Leghorn	1906	1914.85	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	2218	1906.65	Florida
Famous Poultry Farms	Leghorn Cross	1854	1858.55	Georgia
S. E. Raymond	Lamona	1704	1814.75	Storrs
Iowa Master Breeders	Buff Orpington	1670	1773.60	Missouri
Reginald L. Jones	Light Brahma	1365	1442.90	Hunterdon, N. J.
Walter Dobe	Barnevelder	1196	1270.00	Western New York
Daniel S. Riker	Buff Rock	466	428.45	Maine

High Hen in Each Breed for the Year—(51 Weeks)

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	343	368.95	Storrs
E. B. Parmenter	Rhode Island Red	310	368.95	Rhode Island
George A. Pearce	New Hampshire	317	344.95	Passaic, N. J.
Norman W. Amidon	Barred Rock	316	333.40	Pennsylvania
Earl C. Dunham	White Rock	304	330.65	Georgia
T. D. Brown	White Minorca	301	329.20	Texas
Harvey E. Taylor	White Wyandotte	298	308.20	Texas
Norman Stansfield	Black Australorp	259	282.55	Rhode Island
Raymond S. Thomas	Ancona	265	273.90	Pennsylvania
Iowa Master Breeders	Buff Orpington	246	265.80	Missouri
Hillview Poultry Farm	White Giant	253	263.95	Texas
Famous Poultry Farm	Leghorn Cross	270	257.65	Georgia
E. J. Covey	Black Minorca	235	245.40	Texas
Harry L. Phillips	Columbian Rock	217	235.90	Missouri
S. E. Raymond	Lamona	212	232.65	Storrs
Reginald L. Jones	Light Brahma	205	225.00	Hunterdon, N. J.
Lindstrom Poultry Farm	Buff Minorca	198	213.25	Missouri
Ward's Poultry Farm	Buff Leghorn	202	209.50	Oklahoma
Cedarlaid Poultry Farm	Brown Leghorn	247	206.45	Florida
Walter Dobe	Barnevelder	182	198.29	Western New York
Daniel S. Riker	Buff Rock	127	134.45	Maine

High Hen in Each Standard Test for the Year

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	343	368.95	Storrs
E. B. Parmenter	Rhode Island Red	340	368.95	Rhode Island
W. A. Seidel	White Leghorn	345	367.10	Texas
George A. Pearce	Rhode Island Red	335	361.95	Passaic, N. J.
H. J. Hardin	Rhode Island Red	334	361.05	Georgia
Booth Farms and Hatchery	White Leghorn	333	358.90	Florida
Thomas Mettler	Rhode Island Red	333	358.40	Hunterdon, N. J.
Ford's Riverbank Farm	Rhode Island Red	324	352.95	Missouri
H. Guy Loose	White Leghorn	320	350.70	Pennsylvania
J. O. Coombs and Son	White Leghorn	322	349.40	Oklahoma
J. A. Hanson	White Leghorn	321	339.85	Western New York
Redbird Farm	Rhode Island Red	310	336.55	New York State
W. E. Pyles	White Leghorn	325	333.65	Michigan
Del Rio Farm	White Leghorn	311	332.00	Arizona
Kalerok Farm	White Rock	300	327.85	Maine
Holser's Valley Farm	White Leghorn	304	327.40	Central New York

High Hen in Each Standard Test for September

Owner	Preed	Eggs	Points	Test
W. A. Seidel	White Leghorn	21	23.10	Texas
Ford's Riverbank Farm	Rhode Island Red	21	23.10	Missouri
Gren-El-Lang Poultry Farm	White Leghorn	21	23.10	Storrs
Kalerok Farm	White Rork	21	23.10	Maine
Rhodes Hatchery	White Leghorn	21	23.05	Georgia
J. A. Hanson	White Leghorn	21	22.95	Western New York
W. E. Pyles	White Leghorn	21	22.80	Michigan
Faust Poultry Farm	White Leghorn	21	22.70	Pennsylvania
Lamar W. Sexton	New Hampshire	21	22.30	Hunterdon, N. J.
W. H. Wilson	Rhode Island Red	21	22.25	Florida
Viall Stanley and Son	Barred Rock	20	21.90	Rhode Island
Content Farm	White Leghorn	21	21.85	Central New York
Eben Wood	Barred Rock	20	21.60	Passaic, N. J.
Ernest Allbert	White Leghorn	20	21.15	Oklahoma
Del Rio Farm	White Leghorn	19	20.90	Arizona
Redbird Farm	Rhode Island Red	18	19.80	New York State

Twenty Highest White Leghorn Pens in Country for the Year

Owner	Eggs	Points	Test
J. A. Hanson	4041	4283.25	Storrs
J. A. Hanson	3658	3893.05	Storrs
Wm. L. Gilbert Home	3663	3882.35	Storrs
Erath Egg Farm	3627	3852.15	Texas
Horseshoe Poultry Ranch	3711	3832.85	Texas
A. E. Guinn	3588	3650.50	Georgia
George M. Heberer	3466	3617.35	Texas
Kauder's Pedigreed Leghorns	3393	3616.40	Storrs
Guy A. Leader	3413	3583.55	Storrs
George A. Pearce	3381	3580.00	Hunterdon, N. J.
Kauder's Pedigreed Leghorns	3338	3561.80	Storrs
J. A. Hanson	3446	3541.80	Passaic, N. J.
W. C. Eckard	3313	3541.70	Michigan
Sand Springs Home Farm	3488	3526.50	Texas
I. Commer	3470	3515.45	Texas
Piho Brothers	3305	3503.05	Storrs
John A. Clear	3349	3490.30	Hunterdon, N. J.
Alfred MacMillan	3263	3484.85	Texas
A. E. Danish	3329	3484.70	Central New York
Rochelle Egg Farm and Hatchery	3433	3455.20	Texas

Twenty Highest Rhode Island Red Pens in Country for the Year

Owner	Eggs	Points	Test
E. B. Parmenter	3444	3741.70	Rhode Island
H. J. Hardin	3465	3683.15	Georgia
Alampi Poultry Breeding Farm	3385	3634.95	Passaic, N. J.
Ralph W. Anderson	3415	3630.55	Storrs
To-Lani Farm	3588	3623.55	Georgia
Thomas Mettler	3444	3608.90	Hunterdon, N. J.
Thomas Mettler	3386	3557.95	Passaic, N. J.
E. B. Parmenter	3293	3548.10	New York State
Ford's Riverbank Farm	3370	3504.10	Maine
Alampi Poultry Breeding Farm	3414	3495.05	Passaic, N. J.
Norman W. Amidon	3278	3473.25	Storrs
Norman W. Amidon	3179	3445.65	Storrs
W. C. Mullins	3256	3443.40	Texas
E. B. Parmenter	3265	3442.55	Western New York
E. B. Parmenter	3219	3439.55	Storrs
Crooks Farm	3225	3432.10	Storrs
J. J. Warren	3214	3411.60	Texas
J. J. Warren	3235	3408.10	Storrs
Walter H. Rogler	3202	3398.00	Storrs
Glendale Poultry Farm	3123	3386.25	Rhode Island

Twenty Highest New Hampshire Pens in Country for the Year

Owner	Eggs	Points	Test
Joachim Breeding Farm	3261	3535.90	Storrs
Thomas Mettler	3416	3526.75	Pennsylvania
Joachim Breeding Farm	3229	3423.05	Pennsylvania
Eben Wood	3069	3338.25	Storrs
George A. Pearce	3282	3329.85	Passaic, N. J.
Lamar W. Sexton	3196	3326.45	Hunterdon, N. J.
Wene Chick Farm	3081	3321.95	Storrs
Eben Wood	2974	3219.30	Rhode Island
James H. Horne	2990	3197.00	Storrs
Triple Pine-Tested Quality	3116	3167.65	Western New York
Schwegler's Hatchery	3072	3114.50	Western New York
Floyd H. Moore	2962	3098.30	Pennsylvania
Pine Top Poultry Farm	2849	3097.05	Storrs
Kauder's Pedigreed Hampshires	2860	3088.65	Georgia
Fuzzydele Farms	2873	3086.05	Pennsylvania
Hubbard Farms	2908	3066.65	Storrs
Hank's Hennery	2908	3023.70	Storrs
Ives Dale Farm	2983	2994.50	Western New York
Thomas J. Harrold	2904	2992.80	Georgia
Broad Acres Farm	2879	2932.55	Storrs

Twenty Highest Barred Plymouth Rock Pens in Country for the Year

Owner	Eggs	Points	Test
Norman W. Amidon	3557	3694.60	Pennsylvania
R. C. Cobb	3505	3644.35	Storrs
Riley Poultry Farm	3385	3359.75	Texas
Dryden Poultry Breeding Farm	3258	3318.95	Storrs
J. W. Schaible	3178	3182.50	Hunterdon, N. J.
R. C. E. Wallace	3066	3108.40	Florida
P. N. Hibbard	3009	3102.50	Storrs
Stuart W. Smith	3025	3091.60	Storrs
Schwegler's Hatchery	3001	3072.70	Central New York
Booth Farms and Hatchery	2917	3068.45	Oklahoma
Fuzzydele Farms	2964	3042.40	Storrs
Foster Jameson	2872	3022.35	Maine
Broad Acres Farm	2974	2997.55	Storrs
Riley Poultry Farm	2850	2982.05	Michigan
Booth Farms and Hatchery	2859	2980.30	Florida
Booth Farms and Hatchery	2770	2961.70	Missouri
E. B. Parmenter	2815	2952.45	Pennsylvania
R. R. Parks	2916	2948.55	Pennsylvania
David T. Cohen	2836	2942.95	Michigan
Riley Poultry Farm	2821	2899.10	Georgia

Twenty Highest White Plymouth Rock Pens in Country for the Year

Owner	Eggs	Points	Test
Riley Poultry Farm	3135	3264.70	Oklahoma
Kalerok Farm	2800	3007.45	Rhode Island
Homestead Farm	3115	2977.45	Pennsylvania
John Spangenberg	2846	2947.65	Storrs
Riley Poultry Farm	2911	2936.10	Storrs
Four Winds Farm	2885	2927.60	Michigan
Belcarihill Farms	2864	2914.10	Storrs
E. A. Hirt	2701	2849.50	Storrs
Booth Farms and Hatchery	2756	2813.80	Texas
Booth Farms and Hatchery	2635	2796.80	Missouri
Philip S. Davis	2667	2789.05	Central New York
F. L. Woodworth	2610	2780.20	Michigan
Drumm Egg Farm	2664	2760.80	Georgia
G. A. Robertson and Son	2537	2758.15	Central New York
Riley Poultry Farm	2898	2745.30	Georgia
Townsley Trapnest Farm	2642	2738.65	Georgia
John Spangenberg	2624	2736.25	Maine
Riley Poultry Farm	2611	2696.45	Michigan
Belcarihill Farms	2648	2693.35	Pennsylvania
E. A. Hirt	2539	2691.80	Rhode Island

Average Production in Each Test for the Year

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for Sept.	Per Cent Mortality for Year
Storrs	1,300	213.71	223.19	25.05	1.07	16.30
Passaic, N. J.	1,144	201.53	208.66	24.70	.96	18.27
Texas	1,456	201.89	206.96	24.60	1.44	22.11
Pennsylvania	1,066	200.80	206.67	24.50	2.07	22.42
Oklahoma	650	199.03	205.41	24.76	3.70	20.31
Georgia	1,352	199.66	204.73	24.60	2.15	23.52
Hunterdon, N. J.	650	194.95	202.62	24.80	1.69	19.85
Michigan	741	192.56	199.69	24.88	2.03	22.67
Western New York	884	189.96	197.74	24.96	.56	14.81
Florida	1,248	192.90	197.30	24.52	1.28	19.70
Central New York	910	187.08	195.95	25.12	.44	17.03
Arizona	390	188.79	189.53	24.07	2.56	25.38
New York State	1,092	183.45	189.14	24.72	1.10	16.66
Rhode Island	650	178.84	188.66	25.29	1.07	22.60
Missouri	780	169.00	180.00	25.56	1.53	22.94
Maine	1,027	174.10	178.00	24.00	2.97	23.90
All Tests	15,340	194.29	199.43	24.62	1.62	20.32

High Pen, Each Breed, in Illinois Non-Standard Test to October 1

Owner	Breed	Eggs	Points
E. T. Hirstein	White Leghorn	2140	2215.55
Mapleside Poultry Farm	Barred Rock	2216	2205.60
F. S. Tarbill	Rhode Island Red	1934	1992.15
Berry-Ajax	Black Australorp	1797	1874.90
Belldear Hatchery	White Wyandotte	1728	1790.45
John Pfeiffer	New Hampshire	1452	1583.25
Illinois Hatchery	White Rock	1505	1567.55
Wallace Moody	Buff Rock	1115	1150.05

Five High Hens, R.O.P. Progeny Test, Paterson, N. J., for the Year

Owner	Breed	Eggs	Points
W. B. Coles	White Leghorn	317	329.00
Crooks Farm	Rhode Island Red	302	326.40
E. R. Rutter	White Rock	313	325.50
Creighton Brothers	White Leghorn	302	324.45
E. B. Parmenter	Rhode Island Red	301	323.70

High Pen, Each Breed, Vineland, N. J., Hen Test, for the Year

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	2175	2349	Two-Year
E. B. Parmenter	Rhode Island Red	1956	2108	Two-Year
Schwegler's Hatchery	Barred Rock	1860	1989	Two-Year
Albert Lawton	White Rock	1472	1586	Two-Year
Pine Top Poultry Farm	New Hampshire	914	997	Two-Year
Sebold Poultry Farm	White Leghorn	1701	1767	Three-Year
J. J. Warren	Rhode Island Red	1204	1299	Three-Year
Nedlar Farm	New Hampshire	956	1020	Three-Year
Treiber Poultry Farm	White Leghorn	1825	1954	Mixed-Age
Schwegler's Hatchery	White Wyandotte	1794	1921	Mixed-Age
Kerr Chickeries	Barred Rock	1656	1771	Mixed-Age
Schwegler's Hatchery	White Rock	1515	1603	Mixed-Age
Wene Chick Farm	New Hampshire	1340	1435	Mixed-Age
Kerr Chickeries	Rhode Island Red	1130	1226	Mixed-Age

High Pen, Each Breed, Vineland, N. J., Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
Kauder's Pedigreed Leghorns	White Leghorn	5967	6450	Two-Year
E. B. Parmenter	Rhode Island Red	5661	5964	Two-Year
Schwegler's Hatchery	Barred Rock	5169	5427	Two-Year
Albert Lawton	White Rock	4465	4744	Two-Year
Pine Top Poultry Farm	New Hampshire	3691	3985	Two-Year
Kauder's Pedigreed Leghorns	White Leghorn	7514	8074	Three-Year
J. J. Warren	Rhode Island Red	7110	7657	Three-Year
Nedlar Farm	New Hampshire	5611	6126	Three-Year

High Pen, Each Breed, in Pennsylvania Hen Test for the Year

Owner	Breed	Eggs	Points
J. A. Hanson	White Leghorn	2725	2969.30
E. B. Parmenter	Barred Rock	2465	2695.80
Fuzzydele Farms	New Hampshire	2006	2195.40
J. J. Warren	Rhode Island Red	1984	2159.85
Lindstrom Poultry Farm	White Wyandotte	1980	2155.00

High Pen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	6100	6548.75	Two-Year
E. B. Parmenter	Barred Rock	5776	6218.95	Two-Year
J. J. Warren	Rhode Island Red	5505	5887.45	Two-Year
Fuzzydele Farms	New Hampshire	5261	5673.65	Two-Year
Lindstrom Poultry Farm	White Wyandotte	5070	5436.65	Two-Year

High Hen, Each Breed, in Pennsylvania Hen Test—Lifetime Record

Owner	Breed	Eggs	Points	Class
J. A. Hanson	White Leghorn	539	583.50	Two-Year
E. B. Parmenter	Barred Rock	532	579.55	Two-Year
E. B. Parmenter	Rhode Island Red	504	550.70	Two-Year
Fuzzydele Farms	New Hampshire	496	526.35	Two-Year
Lindstrom Poultry Farm	White Wyandotte	449	481.95	Two-Year
A. M. Wolgemuth	White Leghorn	786	807.70	Three-Year

High Pen, Each Breed, N. J. R.O.P. Progeny Test, for the Year

Owner	Breed	Eggs	Points
J. J. Warren	Rhode Island Red	3840	3951
Dembro Poultry Farm	White Leghorn	3365	3574
E. R. Rutter	White Rock	3266	3339
Mrs. C. G. Schmidt	White Wyandotte	3087	3309

Five High Pens, R.O.P. Progeny Test, Paterson, N. J., for the Year

Owner	Breed	Eggs	Points
J. J. Warren	Rhode Island Red	3840	3951
E. B. Parmenter	Rhode Island Red	3687	3815
Dembro Poultry Farm	White Leghorn	3365	3574
W. B. Coles	White Leghorn	3492	3570
Eli H. Bodine	White Leghorn	3275	3422

Five High Families, N. J. R.O.P. Progeny Test, for the Year

Owner	Breed	Eggs	Points
Kwality Farm	White Leghorn	1353	1411
J. J. Warren	Rhode Island Red	1315	1385
W. B. Coles	White Leghorn	1374	1365
E. B. Parmenter	Rhode Island Red	1337	1362
E. B. Parmenter	Rhode Island Red	1311	1353

All Time High Hen Score, Each Breed, in U. S. Standard Tests

Owner	Breed	Year	Eggs	Points	Test
Kauder's Pedigreed Leghorns	White Leghorn	1939	340	372.30	Storrs
J. J. Warren	Rhode Island Red	1938	341	369.55	Storrs
Weber Duck Farm	Barred Rock	1937	334	362.00	Maine
George A. Pearce	New Hampshire	1940	317	344.95	Passaic, N. J.
G. C. Murray	White Rock	1933	307	333.35	Texas
T. D. Brown	White Minorca	1940	301	329.20	Texas
E. S. McSweeny	Black Australorp	1939	302	322.20	Arizona
Perry T. Kistler	Barred Rock Crossbred	1935	295	308.55	Pennsylvania
Harvey E. Taylor	White Wyandotte	1940	298	308.20	Texas
Crystal Springs Farm	Rose Comb R. I. Red	1932	286	295.90	Rhode Island
E. J. Covey	Black Minorca	1937	278	294.95	Texas
Raymond Murphy	Jersey White Giant	1939	273	291.05	Missouri
Eriksen's Ancona Yards	Ancona	1937	291	288.00	Storrs
Mrs. M. M. Clarke	Light Brahma	1934	250	272.00	Maine
L. C. Gravlee	Silver Laced Wyandotte	1933	250	271.20	Alabama

(Continued on page following)

All Time High Hen Score, Each Breed, in U. S. Standard Tests

(Continued from page 699)

Owner	Breed	Year	Eggs	Points	Test
S. E. Raymond	Lamona	1933	248	267.65	Texas
Sunny Ridge Farm	Jersey Black Giant	1933	244	266.80	Rhode Island
Iowa Master Breeders	Buff Orpington	1940	246	265.80	Missouri
Harry L. Day	Exchequer Leghorn	1934	265	261.55	Florida
Famous Poultry Farms	Leghorn Cross	1940	250	257.65	Georgia
Far-A-Way Farm	Buff Rock	1933	239	254.00	New York State
A. E. Hampton	Black Leghorn	1931	262	253.35	Hunterdon, N. J.
Ward's Poultry Farm	Buff Leghorn	1933	241	247.90	Oklahoma
Blue Ribbon Farm	Rhode Island White	1939	225	247.75	Texas
Harry L. Phillips	Columbian Rock	1939	224	243.70	Missouri
Lindstrom Poultry Farm	Buff Minorca	1939	247	242.10	Rhode Island
Cedarlaid Poultry Farm	Brown Leghorn	1936	278	241.15	Florida
Far-A-Way Farm	Buff Wyandotte	1931	230	240.05	Alabama
August D. Arnold	White Barnevelder	1934	249	236.00	Maine
John Imhof	Light Barnevelder	1933	227	229.00	Maine
S. H. Palmer	Columbian Wyandotte	1932	231	224.00	Florida
Edward Nowak	Buttercup	1932	225	218.60	Florida
Walter C. Dobe	Andalusian	1934	202	218.00	New York State
Skyland Farm	Houdan	1931	204	215.55	Passaic, N. J.
R. A. Padgett	Speckled Sussex	1931	201	208.40	Texas
Bestcroft	Silver Campine	1936	195	203.05	Hunterdon, N. J.
Capt. I. B. Clarke	Buff Australorp	1936	205	201.25	New York State
Holdenville Poultry Farm	Hamburg	1933	225	192.85	Oklahoma

All Time High Pen Score, Each Breed, in U. S. Standard Tests

Owner	Breed	Year	Birds	Eggs	Points	Test
J. A. Hanson	White Leghorn	1940	13	4041	4283.25	Storrs
Homestead Farm	Rhode Island Red	1938	13	3715	4000.65	Storrs
Norman W. Amidon	Barred Rock	1940	13	3557	3694.60	Pennsylvania
Edward N. Larrabee	New Hampshire	1938	13	3434	3685.30	Storrs
Riley Poultry Farm	White Rock	1940	13	3135	3264.70	Oklahoma
Harvey E. Taylor	White Wyandotte	1940	13	3203	3244.25	Texas
Eriksens Ancona Yards	Ancona	1938	13	3117	3022.00	Storrs
Lonnie Van Sant	Black Australorp	1939	13	2813	2972.40	Arizona
T. D. Brown	White Minorca	1938	13	2416	2549.95	Texas
Raymond Murphy	Jersey White Giant	1938	13	2271	2447.40	Missouri
E. J. Covey	Black Minorca	1940	13	2346	2438.60	Texas
Hall Brothers	Barred Rock Crossbred	1937	10	2309	2406.75	New York State
Crystal Springs Fm.	Rose Comb R. I. Red	1932	10	2263	2337.25	Rhode Island
Mrs. Maggie Thornton	Buff Orpington	1933	10	2085	2207.30	Texas
S. E. Raymond	Lamona	1939	13	2056	2190.50	Storrs
Donald C. Chandler	Silver Laced Wyan.	1939	13	2121	2126.25	Maine
Far-A-Way Farm	Buff Rock	1933	10	2109	2111.00	New York State
Lindstrom Poultry Farm	Buff Minorca	1938	13	1948	2098.35	Missouri
Harry L. Phillips	Columbian Rock	1940	13	1938	2071.65	Missouri
Wm. W. Lehman	Buff Leghorn	1939	13	2036	2058.20	Pennsylvania
F. V. Dufresne	Jersey Black Giant	1932	10	1887	2024.55	Passaic, N. J.
A. E. Hampton	Black Leghorn	1931	10	2093	1964.15	Hunterdon, N. J.
Blue Ribbon Farms	Rhode Island White	1936	10	2152	1962.85	Texas
Cedarlaid Poultry Farm	Brown Leghorn	1940	13	2218	1906.65	Florida
Mrs. M. M. Clarke	Light Brahma	1934	10	1780	1900.00	Maine
Famous Poultry Farms	Leghorn Cross	1940	13	1854	1858.55	Georgia
Harry L. Day	Exchequer Leghorn	1934	10	1854	1835.80	Florida
S. H. Palmer	Columbian Wyandotte	1932	10	1840	1764.65	Florida
Bestcroft	Silver Campine	1936	10	1723	1744.40	Hunterdon, N. J.
John Imhof	Light Barnevelder	1933	10	1710	1680.00	Maine
R. A. Padgett	Speckled Sussex	1931	10	1602	1575.25	Texas
Far-A-Way Farm	Buff Wyandotte	1931	10	1638	1535.00	Alabama
Capt. I. B. Clarke	Buff Australorp	1937	10	1529	1502.80	New York State
Skyland Farm	Houdan	1931	10	1393	1448.30	Passaic, N. J.
Holdenville Poultry Farm	Hamburg	1933	10	1615	1442.00	Oklahoma
Walter C. Dobe	Andalusian	1935	10	1357	1424.15	New York State
D. C. Gilles	Buttercup	1932	10	1393	1366.30	Florida
August D. Arnold	White Barnevelder	1934	10	750	703.00	Maine

Hens Earning 320 or More Points Each for the Year

Owner	Breed	Eggs	Points	Test
J. A. Hanson	White Leghorn	343	368.95	Storrs
W. A. Seidel	White Leghorn	345	367.10	Texas
Booth Farms and Hatchery	White Leghorn	333	358.90	Florida
Booth Farms and Hatchery	White Leghorn	332	357.70	Georgia
J. A. Hanson	White Leghorn	337	354.25	Storrs
J. A. Hanson	White Leghorn	326	354.00	Storrs
H. Guy Loose	White Leghorn	320	350.70	Pennsylvania
J. O. Coombs and Son	White Leghorn	322	349.40	Oklahoma
George M. Heberer	White Leghorn	322	348.10	Texas
Erath Egg Farm	White Leghorn	319	345.95	Texas
Wm. L. Gilbert Home	White Leghorn	315	345.45	Storrs
J. A. Hanson	White Leghorn	326	345.20	Storrs
Rochelle Egg Farm & Hatchery	White Leghorn	320	345.15	Texas
J. A. Hanson	White Leghorn	325	344.70	Storrs
George M. Heberer	White Leghorn	335	343.10	Texas
Henrich Poultry Farm	White Leghorn	317	342.35	Missouri
George M. Heberer	White Leghorn	318	341.25	Texas
J. A. Hanson	White Leghorn	317	340.60	Storrs
J. A. Hanson	White Leghorn	321	339.85	Western New York
Lux Leghorn Land	White Leghorn	315	339.70	Florida
Horseshoe Poultry Ranch	White Leghorn	312	339.20	Texas
Erath Egg Farm	White Leghorn	311	338.20	Texas
J. A. Hanson	White Leghorn	314	338.00	Storrs
Kauder's Pedigreed Leghorns	White Leghorn	336	337.70	Georgia
Horseshoe Poultry Ranch	White Leghorn	316	336.45	Texas
J. A. Hanson	White Leghorn	317	335.70	Storrs
Stanley Geisler	White Leghorn	317	335.70	Western New York
Easterwood Leghorn Farm	White Leghorn	308	335.55	Georgia
Horseshoe Poultry Ranch	White Leghorn	329	335.30	Texas
Kauder's Pedigreed Leghorns	White Leghorn	332	334.80	Western New York
J. A. Hanson	White Leghorn	314	334.80	Storrs
Creighton Brothers	White Leghorn	307	334.50	Oklahoma
Hillview Poultry Farm	White Leghorn	332	334.25	Texas
J. A. Hanson	White Leghorn	311	334.20	Passaic, N. J.
J. A. Hanson	White Leghorn	318	334.00	Pennsylvania
Kauder's Pedigreed Leghorns	White Leghorn	331	333.70	Passaic, N. J.
W. E. Pyles and Son	White Leghorn	325	333.65	Michigan
Missouri Valley Poultry Farm	White Leghorn	316	333.60	Florida
J. A. Hanson	White Leghorn	308	333.35	Storrs
Kauder's Pedigreed Leghorns	White Leghorn	305	333.30	Storrs
J. A. Hanson	White Leghorn	313	333.00	Storrs
Kauder's Pedigreed Leghorns	White Leghorn	306	332.85	Storrs
Wm. L. Gilbert Home	White Leghorn	307	332.65	Storrs
W. A. Seidel	White Leghorn	324	332.50	Texas
Riley Poultry Farm	White Leghorn	312	332.25	Michigan
Del Rio Farm	White Leghorn	311	332.00	Arizona
Foreman Poultry Farm	White Leghorn	312	331.65	Florida
Easterwood Leghorn Farm	White Leghorn	302	330.65	Texas
I. Commer	White Leghorn	304	330.60	Texas
A. E. Guinn	White Leghorn	316	330.20	Georgia
W. A. Seidel	White Leghorn	315	329.75	Georgia
M. A. Dounay	White Leghorn	308	329.55	Passaic, N. J.
Nelson's Leghorn Breed. Farm	White Leghorn	309	329.50	Arizona
J. A. Hanson	White Leghorn	313	329.35	Storrs
Horseshoe Poultry Ranch	White Leghorn	324	329.15	Texas
Foreman Poultry Farm	White Leghorn	319	329.10	Hunterdon, N. J.
Foreman Poultry Farm	White Leghorn	324	328.95	Georgia
J. A. Hanson	White Leghorn	322	328.95	Storrs
W. A. Seidel	White Leghorn	302	328.85	Texas
J. A. Hanson	White Leghorn	305	328.75	Passaic, N. J.
Lone Oak Leghorn Farm	White Leghorn	307	328.70	Georgia
Lux Leghorn Land	White Leghorn	314	328.65	Florida
Kauder's Pedigreed Leghorns	White Leghorn	305	328.65	Storrs
Kauder's Pedigreed Leghorns	White Leghorn	315	328.50	Storrs
Northland Farm	White Leghorn	312	328.40	Western New York
Alfred MacMillan	White Leghorn	301	328.35	Texas
Lone Oak Leghorn Farm	White Leghorn	300	328.00	Georgia
W. A. Seidel	White Leghorn	306	327.60	Texas

(Continued on page following)

Hens Earning 320 or More Points Each for the Year

(Continued from page 701)

Owner	Breed	Eggs	Points	Test
George A. Pearce	White Leghorn	304	327.55	Hunterdon, N. J.
J. A. Hanson	White Leghorn	309	327.50	Storrs
Erath Egg Farm	White Leghorn	301	327.50	Texas
Nelson's Leghorn Breed. Farm	White Leghorn	321	327.40	Texas
J. O. Coombs and Son	White Leghorn	311	327.40	Texas
Holser's Valley Farm	White Leghorn	304	327.40	Central New York
Guy A. Leader	White Leghorn	302	327.35	Pennsylvania
Lux Leghorn Land	White Leghorn	302	327.35	Missouri
Guy A. Leader	White Leghorn	303	327.15	Pennsylvania
Alfred MacMillan	White Leghorn	301	326.65	Texas
Hillview Poultry Farm	White Leghorn	327	326.55	Georgia
Becker's Ravenswood Leg. Fm.	White Leghorn	320	326.50	Florida
Kauder's Pedigreed Leghorns	White Leghorn	307	326.25	Storrs
Nelson's Leghorn Breed. Farm	White Leghorn	313	326.00	Texas
George M. Heberer	White Leghorn	311	325.90	Texas
W. S. Hannah and Sons	White Leghorn	309	325.90	Texas
Creighton Brothers	White Leghorn	305	325.75	Pennsylvania
Booth Farms and Hatchery	White Leghorn	307	325.65	Florida
J. A. Hanson	White Leghorn	304	325.55	Storrs
W. A. Seidel	White Leghorn	297	325.55	Florida
J. A. Hanson	White Leghorn	318	325.50	Storrs
Erath Egg Farm	White Leghorn	300	325.10	Texas
J. A. Hanson	White Leghorn	316	324.95	Storrs
Creighton Brothers	White Leghorn	299	324.95	Pennsylvania
C. B. Davidsen	White Leghorn	309	324.75	Georgia
Horseshoe Poultry Ranch	White Leghorn	308	324.75	Texas
Gulfkist Poultry Farm	White Leghorn	319	324.55	Florida
Fred Scheimpf	White Leghorn	303	324.35	Central New York
W. E. Pyles and Son	White Leghorn	309	324.30	Georgia
Dublin Poultry Farm	White Leghorn	308	324.25	Georgia
George M. Heberer	White Leghorn	313	324.10	Texas
Kauder's Pedigreed Leghorns	White Leghorn	325	324.00	Storrs
W. A. Seidel	White Leghorn	304	323.70	Georgia
Famous Poultry Farm	White Leghorn	324	323.60	Georgia
Rinker Poultry Farm	White Leghorn	300	323.60	Pennsylvania
Horseshoe Poultry Ranch	White Leghorn	322	323.45	Texas
W. E. Pyles and Son	White Leghorn	295	323.45	Georgia
W. A. Seidel	White Leghorn	301	323.40	Texas
J. A. Hanson	White Leghorn	315	323.20	Michigan
Kauder's Pedigreed Leghorns	White Leghorn	295	322.95	Storrs
George M. Heberer	White Leghorn	302	322.85	Texas
W. A. Seidel	White Leghorn	312	322.80	Texas
W. C. Eckard	White Leghorn	299	322.80	Michigan
Hillview Poultry Farm	White Leghorn	314	322.30	Georgia
Kerr Chickeries	White Leghorn	296	322.30	Storrs
Lindstrom Poultry Farm	White Leghorn	309	322.20	Georgia
Burr's Poultry Farm	White Leghorn	299	322.70	Pennsylvania
C. and G. Farms	White Leghorn	303	321.65	Western New York
A. E. Guinn	White Leghorn	301	321.55	Georgia
Missouri Valley Poultry Farm	White Leghorn	301	321.55	New York State
J. O. Coombs and Son	White Leghorn	301	321.50	Texas
Rochelle Egg Farm & Hatchery	White Leghorn	294	321.30	Texas
Sand Springs Home Farm	White Leghorn	303	321.15	Georgia
Alampi Poultry Breed. Farm	White Leghorn	299	321.10	Passaic, N. J.
Foreman Poultry Farm	White Leghorn	296	321.10	Missouri
Plainview Poultry Farm	White Leghorn	299	321.00	Texas
Guy A. Leader	White Leghorn	299	321.00	Pennsylvania
J. A. Hanson	White Leghorn	305	320.90	Western New York
J. O. Coombs and Son	White Leghorn	303	320.75	Texas
Dublin Poultry Farm	White Leghorn	297	320.75	Texas
Rhodes Hatchery	White Leghorn	300	320.65	Texas
Alfred MacMillan	White Leghorn	293	320.65	Texas
Fisher Orchards	White Leghorn	303	320.15	Central New York
Creighton Brothers	White Leghorn	313	320.10	Pennsylvania
W. A. Seidel	White Leghorn	305	320.05	Arizona

(Continued on page following)

Hens Earning 320 or More Points Each for the Year

(Continued from page 702)

Owner	Breed	Eggs	Points	Test
E. B. Parmenter	Rhode Island Red	340	368.95	Rhode Island
George A. Pearce	Rhode Island Red	335	361.95	Passaic, N. J.
H. J. Hardin	Rhode Island Red	334	361.05	Georgia
Thomas Mettler	Rhode Island Red	333	358.40	Hunterdon, N. J.
E. B. Parmenter	Rhode Island Red	326	358.20	Storrs
E. B. Parmenter	Rhode Island Red	322	354.00	Passaic, N. J.
Ford's Riverbank Farm	Rhode Island Red	324	352.95	Missouri
W. H. Wilson	Rhode Island Red	342	350.85	Georgia
E. B. Parmenter	Rhode Island Red	321	348.35	Storrs
Redbird Farm	Rhode Island Red	334	344.90	Pennsylvania
E. B. Parmenter	Rhode Island Red	315	344.70	Rhode Island
E. B. Parmenter	Rhode Island Red	315	343.95	Rhode Island
Alampi Poultry Breed. Fm.	Rhode Island Red	337	342.55	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	312	341.90	Rhode Island
H. J. Hardin	Rhode Island Red	312	341.05	Georgia
Payne and Otey	Rhode Island Red	318	341.00	Florida
G. E. Coleman, Jr.	Rhode Island Red	312	340.40	Storrs
Arbor Acres	Rhode Island Red	313	339.65	Storrs
W. C. Mullins	Rhode Island Red	312	338.60	Texas
Alampi Poultry Breed. Fm.	Rhode Island Red	312	338.00	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	320	337.60	Florida
E. B. Parmenter	Rhode Island Red	307	336.75	Western New York
Redbird Farm	Rhode Island Red	310	336.55	New York State
H. J. Hardin	Rhode Island Red	315	336.50	Georgia
J. J. Warren	Rhode Island Red	309	336.20	Texas
G. Glifford Butterworth	Rhode Island Red	313	334.05	Rhode Island
E. B. Parmenter	Rhode Island Red	331	333.30	Storrs
J. J. Warren	Rhode Island Red	309	332.75	Florida
Ralph W. Anderson	Rhode Island Red	308	332.40	Storrs
Wene Chick Farms	Rhode Island Red	305	332.20	Storrs
E. B. Parmenter	Rhode Island Red	306	330.15	Rhode Island
W. H. Wilson	Rhode Island Red	313	329.65	Florida
E. B. Parmenter	Rhode Island Red	306	329.40	Georgia
W. C. Mullins	Rhode Island Red	304	329.40	Texas
E. B. Parmenter	Rhode Island Red	306	329.35	Pennsylvania
W. H. Wilson	Rhode Island Red	307	328.90	Florida
Norman W. Amidon	Rhode Island Red	301	328.60	Storrs
Donald I. Goodenough	Rhode Island Red	311	328.55	Storrs
E. B. Parmenter	Rhode Island Red	305	327.75	Storrs
L. D. Bartholomew	Rhode Island Red	316	327.65	Storrs
Cane Poultry Farm	Rhode Island Red	304	327.20	Hunterdon, N. J.
To-Lani Farm	Rhode Island Red	326	327.00	Georgia
H. J. Hardin	Rhode Island Red	304	326.95	Georgia
Booth Farms and Hatchery	Rhode Island Red	309	326.85	Georgia
Thomas Mettler	Rhode Island Red	302	326.55	Hunterdon, N. J.
J. J. Warren	Rhode Island Red	305	326.10	New York State
W. H. Wilson	Rhode Island Red	300	325.55	Georgia
H. J. Hardin	Rhode Island Red	303	325.35	Georgia
Louis Schaible	Rhode Island Red	314	325.20	Passaic, N. J.
J. J. Warren	Rhode Island Red	296	325.20	Missouri
Crooks Farm	Rhode Island Red	316	325.05	Western New York
G. B. Treadwell	Rhode Island Red	317	324.35	Storrs
H. J. Hardin	Rhode Island Red	298	323.50	Georgia
A. S. Pendleton	Rhode Island Red	303	323.25	Storrs
E. B. Parmenter	Rhode Island Red	318	323.20	Passaic, N. J.
J. J. Warren	Rhode Island Red	307	322.50	Texas
Geo. E. Wells and Son	Rhode Island Red	301	322.45	Storrs
E. B. Parmenter	Rhode Island Red	294	322.45	Maine
Aseltine Poultry Farm	Rhode Island Red	302	322.00	Michigan
Walter H. Rogler	Rhode Island Red	302	321.90	Storrs
Alampi Poultry Breed. Farm	R. I. Red	298	321.80	Passaic, N. J.
J. J. Warren	Rhode Island Red	296	321.75	Storrs
Alampi Poultry Breed. Farm	R. I. Red	316	321.65	Passaic, N. J.
E. B. Parmenter	Rhode Island Red	305	321.35	Storrs
Walter H. Rogler	Rhode Island Red	294	321.20	Storrs
E. B. Parmenter	Rhode Island Red	295	321.10	New York State

(Continued on page following)

Hens Earning 320 or More Points Each for the Year

(Continued from page 703)

Owner	Breed	Eggs	Points	Test
Geo. E. Wells and Son	Rhode Island Red	303	320.65	Storrs
Roberts Poultry Farm	Rhode Island Red	296	320.55	Storrs
Globus Poultry Farm	Rhode Island Red	292	320.45	Maine
E. B. Parmenter	Rhode Island Red	292	320.45	Rhode Island
E. B. Parmenter	Rhode Island Red	296	320.35	Pennsylvania
J. J. Warren	Rhode Island Red	292	320.00	Maine
George A. Pearce	New Hampshire	317	344.95	Passaic, N. J.
George A. Pearce	New Hampshire	314	335.35	Hunterdon, N. J.
Eben Wood	New Hampshire	302	329.00	Rhode Island
Thomas Mettler	New Hampshire	338	326.55	Pennsylvania
Fuzzydele Farms	New Hampshire	305	324.10	Western New York
Woody's Hatchery & Plty. Fm.	New Hampshire	305	323.60	Georgia
Thomas J. Harrold	New Hampshire	310	321.95	Georgia
Thomas J. Harrold	New Hampshire	315	321.45	Georgia
Eben Wood	New Hampshire	294	321.30	Rhode Island
Thomas Mettler	New Hampshire	308	320.15	Pennsylvania
Norman W. Amidon	Barred Rock	316	333.40	Pennsylvania
Norman W. Amidon	Barred Rock	326	332.30	Pennsylvania
Booth Farms and Hatchery	Barred Rock	307	328.80	Missouri
R. C. Cobb	Barred Rock	332	327.95	Storrs
Fuzzydele Farms	Barred Rock	320	327.90	Storrs
Eben Wood	Barred Rock	315	325.70	Storrs
Norman W. Amidon	Barred Rock	327	324.65	Pennsylvania
R. C. Cobb	Barred Rock	307	323.20	Storrs
R. R. Parks	Barred Rock	299	322.50	Pennsylvania
Dryden Poultry Breeding Farm	Barred Rock	309	320.10	Pennsylvania
Earl C. Dunham	White Rock	304	330.65	Georgia
Kalerok Farm	White Rock	300	327.85	Maine
Four Winds Farm	White Rock	324	322.60	Michigan
T. D. Brown	White Minorca	301	329.20	Texas

Value of Poultry Equipment Manufactured

Type	1939		1938		1937	
	No.	Value (Dollars)	No.	Value (Dollars)	No.	Value (Dollars)
Oil Brooders	134,254	1,157,537	89,969	801,696	127,328	1,392,275
Electric Brooders	98,357	1,012,546	60,896	625,660	66,017	704,468
Coal Brooders	42,646	470,847	27,503	317,926	41,779	451,807
Gas Brooders	4,621	52,527	2,393	17,717	2,345	17,239
Incubators* (Egg capacity of)	28,783,295	2,506,855	21,356,558	1,943,737	24,963,750	1,984,670
Incubators** (Egg capacity)	1,957,220	182,920	10,486 (Total No.)	203,188	24,148 (Total No.)	311,473
Feeders	3,400,653	1,039,366	2,414,718	708,449	2,718,094	930,955
Waterers	4,638,577	1,014,288	2,552,210	629,197	2,752,795	723,188
Totals		$7,436,886		$5,247,570		$6,516,075

* More than 1,000-egg capacity
** 1,000-egg capacity or less
—Compiled from Bureau of Census Report.

TWO turkey gobblers made life miserable for a guinea hen on the Cy Young farm near Danville, Ill., when they evicted the hen from her nest and took turns sitting on her eggs.

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Hens Earning 320 or More Points Each for the Year

(Continued from page 703)

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Thomas J. Harrold	New Hampshire	315	321.45	Georgia
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Norman W. Amidon	Barred Rock	316	333.40	Pennsylvania
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R. C. Cobb	Barred Rock	332	327.95	Storrs
Fuzzydele Farms	Barred Rock	320	327.90	Storrs
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Norman W. Amidon	Barred Rock	327	324.65	Pennsylvania
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** 1,000-egg capacity or less
—Compiled from Bureau of Census Report.

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Vol. 2, No. 24 December 15, 1940

Body Needs in Feeding for Eggs

By H. E. COSBY
Oregon State College

Condensed from The Eggsaminer

THE little hen which has been so highly commercialized for the production of eggs for human food is treated like an inanimate machine instead of the remarkable functioning unit of flesh and blood which she is.

A hen that lays 200 eggs per year is accepted as a most commonplace object. The hen which produces 300 eggs today elicits no more than a grunt of commendation for her feat from the owner or bystanders. Yet the 4-pound hen which lays 200 eggs has laid 25 pounds of eggs, or more than six times her own body weight.

The 300-egger has supplied the owner with 38 pounds of eggs to sell—a commercial product equal to nearly ten times her own body weight. She is truly a remarkable animal and is both wonderfully and fearfully made. To raise her from chick to pullet and to care for her during her productive years is an overwhelming challenge to the ability of man, despite a false prevailing opinion among folks, both rural and urban, that the poultry business is the profitable and easy way to spend the leisure hours void of disappointments.

Fundamentally, we may feed chickens with four different objectives in view; namely, growth, production, breeding and fattening. In

Pacific Cooperative Poultry Producers, 306 S. E. Ash Street, Portland, Oregon.
(The Eggsaminer, October, 1940)

so far as feeding pullets is concerned, we are interested only in two of the fundamental objectives; namely, growth and production.

Egg production does not start until the pullets are nearly mature. It does start, however, before they are fully mature. For this reason, the successful poultryman is the man who recognizes the necessity of feeding for growth, as well as production, during the fall and winter months. He knows from experience that his pullets should make normal gains in body weight each month up to about March. Unless he can feed in such a way as to obtain this growth objective, the production will decline in order that the birds can build up body needs.

It is not an unusual experience to get two letters from the same person during the fall, one in September commenting on pullets laying 80 per cent at six months of age, and another about Christmas time, calling for the wrecking crew to get the pullets out of the ditch right now. So much has been said and written about feeding for egg production that it may be of slight interest to discuss feeding for body maintenance needs separately, even though it is always blanketed and understood to be a basic part of the egg production feeding.

The first and primary purpose of feeds, with all of their complexities, is to maintain or support life. Life itself depends upon maintaining a normal body temperature, which in case of the hen is about 107 degrees. We must look to the proper kinds of food to do this job even though it is aided and abetted by sensible housing. Feeds must supply the energy necessary to maintain voluntary muscular activities involved in walking, flying or eating.

Feeds must supply also the involuntary muscular activities, such as the energy used in the beating of the heart, contractions of the gizzard, peristalsis of the digestive tract and similar work. Mucus, hormones, and enzymes are secretions which are necessary to the body and its functions and must be maintained through the medium of proper feeds. Bones, muscles, fat, blood and all are constantly being repaired and replenished only if and when the hen has access to correct nutrients.

These body functions and repairs which are spoken of as maintenance must be cared for adequately before and during the time the bird lays. If they are not provided for, she slows up or quits production and goes back on a basis of self-preservation or body repair. Proteins and mineral are lost from the body tissues all the time. The hen has no great ability to store up reserves of minerals, proteins, and vitamins, upon which she can draw whenever the owner short-changes her in the daily supply of necessary nutrients.

The body of the pullet, as well as the egg she lays, is composed of exactly the same six broad classes of nutrients; namely, proteins, minerals, fats, carbohydrates, vitamins and water. Supplying the right nutrients for proper body maintenance is the direct and indirect responsibility of proper feeds. All of these intricate and complex processes of digestion and metabolism of feeds by the body of the hen must be provided for in body maintenance before production can start or continue long after it does start.

One-Half of Feed for Maintenance

About one-half of the feed energy consumed is used in meeting the requirements of body maintenance, about one-fourth in muscular activities and about one-fourth for egg manufacture. Where then does the poultry keeper who feeds nothing but grain and water get off? He is not supplying the hens with the six classes of nutrients necessary for body health, to say nothing of supplying materials for egg manufacturing. He gets off at about the same place as the man who tries to cheat the hen in numerous other ways. The stingy feeder, feeding sparingly of a good feed because it costs money, may by so doing keep the hens in good health and yet not give them that surplus 25 per cent of feed from which egg production comes.

The keen-minded feeder of an inferior feed may run into less work of gathering eggs. The over-feeder of grain with limited feeding of mash is likely to fatten the birds at the expense of a lack of nutrients necessary for egg production, which the mash alone contains. The heavy feeding of mash with limited grain feeding for young and growing pullets in production may obtain excellent egg yields for a while but at the expense of decreased body weight. In this case, it is quite to be expected that birds thus fed will go into a rest period and go through a partial molt during which time the body is repaired.

The most important thing in the poultry business and without question the greatest hazard in the entire enterprise is that of raising a good, husky, healthy and vigorous lot of pullets. If the pullets are not of normal flesh and vigor, due to disease, poor breeding, crowded conditions or faulty nutrition, the owner has an uphill job of maintaining profitable production, regardless of how he feeds or whose feed he uses. The chief obstacle to profitable egg production from young pullets is the failure, from one cause or another, to keep the working bodies of the birds in good condition and repair.

Pullet Layers Must Gain

Since the analysis of the hen's body and the analysis of the egg she lays show that each contain the same elements, it is only good common sense to assume that feeding for winter egg production is predicated upon the basic fact of feeding first of all for body maintenance requirements.

The outstanding reason for so many tragedies in fall and winter pullet egg production is the bare fact that so many people become 60, 70 and 80 per cent pullet egg production minded, rather than thinking in management terms of body weight gains each month through the medium of good feeds and sound feeding.

Requirements Vary

Body requirements vary with the weather, the rate of production, the appetite and the vigor of the flock. The additional requirements for egg manufacture are quite constant. The routine feeder of a given number of pounds of feed daily for each 100 hens, regardless of varying conditions, is far more likely to encounter disappointments than he who follows the rules of the old adage "The eye of the master fattens his cattle."

The liberal feeder of all the required classes of nutrients is the one who, by observing his birds and catering to their appetites, rides along on an even keel. There are many things that can and do happen to unexpectedly upset the performance of a flock of birds.

In feeding for eggs, the dollar-and-cents backbone of the farm's poultry enterprise, let no one overlook the vital importance, belittle, grow careless or depreciate the basic importance of feeding first for body maintenance and muscular activities.

Food won the last war, not the Big Berthas. Food will win the present conflict of chaos rather than the diving bombers. That nation which can longest supply the foods for body maintenance will get performance from its military and civilian population that is not possible to obtain from the side of the foe whose people become hungry and desperate.

Feeding of pullets for egg production is both an art and a science, but body needs must be met first before the owner gets any return for his labor and investment.

Keeps Litter Scattered

Elia Clemenson, poultryman of Dorothy, N. J., has found a way to persuade his birds to keep litter evenly distributed over the floors of his new two-story laying house. He used larger windows than ordinarily are used in north wall construction, and the better distribution of light has kept the birds uniformly busy over the complete floor area.

—New Jersey Farm and Garden, Dec., 1940.

Marketing Surplus Cockerels

By GEORGE P. GOODEARL

North Dakota Agricultural Experiment Station

Reprinted from N. D. Bimonthly Bulletin

UNDER a program of breeding for high egg production White Leghorns have responded in an outstanding manner and have become, numerically, the most popular variety of poultry in this country.

White Leghorns, however, are not and never have been a popular market fowl. In some areas the markets definitely discriminate against the White Leghorns. Some producers have even made the recommendation that the White Leghorn males should be killed as baby chicks. The general recommendation of the Department of Poultry Husbandry at the North Dakota Agricultural Experiment Station has been that Leghorn cockerels should be marketed as soon as they have reached a size acceptable to the marketing agency.

In making variety studies on capons at this station, White Leghorns were included in the varieties studied. The reason for this action was to determine if White Leghorn capons would economically reach a weight desired for capons on the market and if it would be a logical procedure for the producer to caponize those cockerels that were to be retained at the home for family use as food. In connection with these studies it was determined to contrast the desirability of marketing White Leghorn cockerels at different stages of growth. In order that the market condition of any one year would not be a major factor, the trials were carried on over a 3-year period.

Separated in Tenth Week

One hundred White Leghorn cockerels were used in each year of the trial. They were reared each year as part of the general Leghorn flock and were separated from the pullets when 10 weeks old. No feed records were kept prior to 10 weeks, the assumption being that there would be no significant difference in the feed consumption of any definite unit of cockerels up to that time.

At 10 weeks, the 100 cockerels were sorted into four separate groups. Each group had the same number of birds. The uniformity in size is demonstrated by the closeness of the average weight per bird in each lot. The lower average weight

North Dakota Agricultural Experiment Station, Fargo, North Dakota
(North Dakota Bimonthly Bulletin, Vol. 2, No. 4)

of the capons is due to the capon weights being taken immediately after the operation. At that time the cockerels had been starved for 36 hours.

The four lots of birds were to be marketed at four different periods. Because of a lack of demand for light broilers less than 2 pounds each in this area, one lot was to be marketed as heavy broilers when 14 weeks old. The second lot was to be held as additional 4 weeks and marketed as friers or light roasters. The third lot of cockerels was held for 12 weeks longer and marketed at 30 weeks of age, which could normally be considered maturity. Capons were held until they were 38 weeks old. The longer holding period for capons was used to show what the rate of gain in weight might be beyond normal maturity of cockerels.

Average Weights

When 10 weeks old the average weight of the Leghorn cockerels used in all pens was just under 2 pounds. Because of the 36-hour starvation period prior to the operation, the White Leghorn males caponized only averaged to weigh 1½ pounds apiece. At 14 weeks, the group sold as broilers were slightly heavier. The friers and roasters were essentially the same weight, with the capons just a little behind. With an average weight of 2.67 pounds per bird, the broilers were marketed.

White Leghorn Weight Table
3-Year Average

	10 wks.	14 wks.	18 wks.	22 wks.	26 wks.	30 wks.	34 wks.	38 wks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Heavy Broilers	1.90	2.67	..	..	..	..	..	..
Friers	1.82	2.56	3.25	..	..	..	..	..
Roasters	1.87	2.57	3.25	3.90	4.41	4.73	..	..
Capons	*1.49	2.46	3.34	4.07	4.62	4.91	5.16	5.29

*Starved weight

At 18 weeks, the males classified as friers and roasters weighed exactly the same for the 3-year average weight. The average weight of the capons was greater at this age than the weight of the uncaponized birds. The friers were marketed at this time. This group of birds would frequently come under the general popular classification of "springers" in many parts of the State.

Beware of Stags

The remaining group of cockerels were carried until they were 30 weeks old. At that age they averaged to weight 4¾ pounds per bird. It was possible to market the males at that time as roasters. A factor needing close watching, however, is that cockerels of that age very quickly move into the market classification of "stags." The market price for stags is extremely low and it is very doubtful that they can ever be produced at a profit. It is certain that Leghorn stags are a definite loss.

At 30 weeks of age, the White Leghorn capons weighed a little more than the cockerels of the same age. The difference in average weight was less than one-fifth of a pound, or less than 3 ounces. At 38 weeks of age the capons averaged just over 5¼ pounds alive. That meant a dressed weight of about 4¾ pounds.

Average Pounds Gain Per Bird

	10-14 wks.	14-18 wks.	18-22 wks.	22-26 wks.	26-30 wks.	30-34 wks.	34-38 wks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Heavy Broilers	.77	..	..	..	..	..	..
Friers	.74	.69	..	..	..	..	..
Roasters	.70	.68	.65	.51	.32	..	..
Capons	.97	.88	.73	.55	.29	.25	.13

It will be noted that the best gains, after Leghorn cockerels were 10 weeks old, were in the first 4-week period. From 14 to 18 weeks the amount of gain in weight shows a relatively small reduction as is true in the next 4-week period. From 22 to 26 weeks there is a definite decrease in the amount of gain as compared to the previous period. In the 4-week period from 26 to 30 weeks the average gain per bird is only one-third of a pound.

Capons Lead in Early Gains

Gains in weight by capons ran a little ahead of the cockerels in each 4-week period from 10 to 26 weeks. In the next 4-week period, the average gain per capon was less than the gain per cockerel. In the period from 30 to 34 weeks, the average gain per capon dropped to a quarter of a pound and in the final 4-week period only 2 ounces average increase in weight per bird was recorded. In the 12-week period after they were 26 weeks old the White Leghorn capons failed to gain an average of a pound per bird in body weight.

No record was kept of the feed consumption of the mixed group of cockerels and pullets before the cockerels were separated when 10 weeks old. Data from the Storrs Agricultural Experiment Station shows a group of 1028 White Leghorn pullets and cockerels consuming 3.51 pounds of feed to 8 weeks, when the cockerels were removed. Cockerels alone would eat somewhat in excess of this amount. For these trials we are assuming a feed consumption of 6.5 pounds of feed per bird during the first 10 weeks.

From 10 to 14 weeks the Leghorn cockerels ate 4.31 pounds of feed per bird and in the ensuing 4 weeks 4.38 pounds per bird. Cockerels ate more than a pound more feed per bird from 18 to 22 weeks than from 14 to 18, then increased the feed consumption more than one pound

White Leghorn Feed Consumption —Total Per Bird — 3-Year Average

	10-14 Wks.	14-18 Wks.	18-22 Wks.	22-26 Wks.	26-30 Wks.	30-34 Wks.	34-38 wks.	10-38 wks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Heavy Broilers	4.31	..	..	..	..	..	..	...
Friers	4.31	4.38	..	..	..	..	..	...
Roasters	4.31	4.38	5.43	6.52	7.23	..	..	...
Capons	4.50	5.42	6.36	7.04	7.24	7.21	6.92	44.29

Pounds Feed Per Pound Gain
3-Year Average

	10-14 Wks.	14-18 Wks.	18-22 Wks.	22-26 Wks.	26-30 Wks.	30-34 Wks.	34-38 Wks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Heavy Broilers	5.60	..	..	...	...	...	...
Friers	5.82	6.35	..	...	...	...	...
Roasters	6.12	6.44	8.35	12.78	22.59	...	...
Capons	4.64	6.16	8.71	12.80	24.97	28.84	53.23

more per bird in the next 4 weeks. From 26 to 30 weeks the rate of increase in feed consumption let up a little, being only about three-quarters of a pound more per bird than in the previous period.

Capons started their increase in feed consumption about 4 weeks before the cockerels. From 10 to 14 weeks they ate only a little more than the cockerels but from 14 to 18 weeks they ate more than a pound more feed per bird than did the cockerels. From 18 to 22 weeks they ate a little less than a pound more feed per bird than the cockerels and in the next 4-week period they ate only one-half pound more feed per bird than the cockerels. Heaviest feed consumption in both groups was from 26 to 30 weeks, when the birds in both groups ate essentially the same amount of feed per bird. In each of the next two 4-week periods the capons showed a decrease in the amount of feed consumed per bird.

It would be expected that, from data just presented, with decreasing amounts of gain and increasing amounts of feed consumed, each 4-week period would show an increasing amount of feed necessary to produce a pound of gain in both cockerels and capons. With the exception of the first 4-week period, from 10 to 14 weeks, the capons required more feed per pound of gain than was required by the cockerels.

Little Profit on Old Birds

After the Leghorn cockerels and capons were 18 weeks old there was little chance of profit over feed cost per pound of gain, and certainly no chance after the birds were 22 weeks old. The point of diminishing returns seems to have been reached when the cockerels are 18 weeks old.

Prices paid per pound of feed for chick rations may vary from one and one-half cents to three cents. Prices paid per pound of live weight for cockerels may vary from 10 to 16 cents per pound. Capon prices have usually been about 4 cents higher.

Production Cost Figures

Our data shows that the Leghorn broilers averaged to weigh 2.67 pounds at 14 weeks and had consumed 10.81 pounds of feed per bird. If feed cost 2 cents per pound, the feed cost would be 21.62 cents per bird. If we were paid 12 cents per pound, live weight, our gross returns would be 32.04 cents per bird. This would leave a margin of 10.42 cents per bird to pay for cost of chick, fuel, labor and interest on investment. Any producer can use his own feed prices and prices paid per pound for his birds to determine what his possibilities are for a profit or for escaping a loss.

If we apply the figures of 2 cents per pound for feed and 12 cents a pound paid for the birds we find the following interesting results. Broilers at 14 weeks returned 10.42 cents per bird over feed cost, friers at 18 weeks returned 8.62 cents per bird over feed cost, roasters at 30 weeks returned 11.54 cents per bird less than feed cost. Using the same feed prices for capons but figuring their returns at 16 cents a pound live weight we have a loss of 16.94 cents per bird from feed cost. The reader is cautioned to remember that the data in this article refers only to Leghorns and should not be applied to dual purpose breeds. For the producer of Leghorns who believes that his average weights are higher than ours he needs only to substitute his own average weights in place of ours to work out his possibilities for profit.

Conclusions

The recommendation that Leghorn cockerels be marketed as soon as they have reached a desirable market size is supported by the experimental data.

If Leghorn cockerels are to be used on the farm for meat they should not be held after they are 18 weeks old. They can be canned then or kept in refrigerator lockers if such are available.

There is nothing to be gained by caponizing Leghorn cockerels.

Clam Shells for Poultry Feeding

Down on the southwest coast of Florida a small mountain of clam shells has been accumulating over the years from a clam shucking plant. Recently the owners decided to grind them up for poultry feeding. Analyses and tests conducted at the Agricultural Experiment Station at Gainesville, Fla., show that the clam shells contained 97 per cent pure calcium and that poultry fed the clam shells did quite as well as on oyster shell.

—Florida Poultryman and Stockman, Nov. 1940.

❝ "MY HENS have become siren-conscious," declares a poultryman in the south-eastern (England) area. "When the (air raid) alarm sounds they stroll sedately to a field defense-trench and stay there quietly, even though bombs fall fairly near."
—Eggs, London, England, September 11, 1940.

Breeding for Hatchability

By **MORLEY A. JULL**
University of Maryland

Condensed from a Talk

THE average hatchability of eggs incubated in commercial and breeder hatcheries in this country is probably about 70 per cent. If this hatchability could be increased to 72 per cent, it would mean approximately a million dollars every year in savings in the cost of hatching eggs. It would mean over $2,000,000 in the increased value of chicks produced from the same number of eggs incubated.

From the standpoint of the hatchery operator, it is obvious, of course that the higher the hatchability the less the egg cost per chick. For instance, in one case where the same price was paid for hatching eggs, a 52 per cent hatchability meant an egg cost of 8 cents per chick whereas a 76 per cent hatchability meant an egg cost of 5½ cents per chick.

Hatchability Limits Profits

As a matter of fact, from a survey of the hatchery industry in Maryland, it was found that there was a direct relationship between hatchability and profit in operating a hatchery. The most profitable hatcheries had a hatchability of 73 per cent; the least profitable hatcheries had a hatchability of 67 per cent. When it is realized that the cost of hatching eggs represents from about 60 to 65 per cent of the total cost of producing chicks, it is apparent that the hatchery operator should be much interested in cooperating with his flock owners in order to secure the highest possible hatchability.

If early hatched, carefully selected pullets are used as breeders, and the flock is well managed, including properly balanced breeding diets, hatchability should be good. Hatchability is inclined to decrease slightly during the second and third years that breeding birds are kept.

On the other hand, it is well known that chick size is highly correlated with egg size and that yearling and older hens usually lay larger eggs than pullets, so there is an advantage in using yearling and older hens as breeders. Moreover, yearling and older hens have demonstrated that they are able to resist disease to some extent at least, and should, therefore, produce better chicks on the average than pullets.

Close inbreeding such as mating full sisters to full brothers tends to decrease hatchability. There is little danger from lowered hatchability through inbreeding, because rarely is much inbreeding practiced in the average flock, especially if mass matings are made up of 10 or 12 males per 100 females.

Presented at NEPPCO Exposition, Atlantic City, N. J., October 3, 1940

Crossbreeding Helps

Crossbreeding tends to increase hatchability. In one experiment it was found that 11 purebred matings gave a hatchability of 69 per cent, whereas 35 crossbred matings gave a hatchability of 76 per cent.

In another case, Barred Plymouth Rock males mated to Barred Plymouth Rock females gave a hatchability of 57 per cent, whereas the same Barred Plymouth Rock females mated to Rhode Island Red males gave a hatchability of 80 per cent.

In still another test, White Leghorn males mated to White Leghorn females gave a hatchability of 71 per cent, whereas the same White Leghorn females mated to Barred Plymouth Rock males gave a hatchability of 80 per cent.

The possibility of improving hatchability is limited, however, when both pure breeds that are crossed are noted for high hatchability. In one test where White Leghorn males mated to White Leghorn females gave a hatchability of 84 per cent, the same White Leghorn females mated to Barred Plymouth Rock males gave a hatchability of 86 per cent. This particular cross is not recommended, but the results show that when breeds having high hatchability are crossed, the increased hatchability cannot be expected to be great. Hatchability is, however, likely to be improved materially when the hatchability of one or the other or both of the parental breeds is quite low.

These different references to the increase in hatchability resulting from crossbreeding are given because of the widespread practice of crossbreeding for broiler production purposes. The most popular cross made for this purpose consists of Barred Plymouth Rock males mated to New Hampshire or Rhode Island Red females.

24-Ounce Eggs Hatch Best

As far as the problem of egg size and hatchability is concerned, it is interesting to note that the best hatchability is usually obtained with eggs averaging approximately 2 ounces each or 24 ounces per dozen. Very large eggs hatch less well than very small eggs. Hatchery operators are strongly recommended not to set eggs weighing less than 2 ounces each, in the case of pullet eggs. The eggs of yearling and older hens should weigh about 26 ounces to the dozen in order that pullets hatched from them should lay eggs averaging about 24 ounces to the dozen.

As far as has been determined, egg

shape apparently does not affect hatchability except that long, pointed eggs usually hatch less well than normal shaped eggs.

Watch for Porous Shells

Eggs with shells that are extremely porous usually hatch more poorly than eggs with good sound shells. R. O. P. breeders, at least, should candle a number of eggs from each of their breeding hens to determine whether or not any hen is laying a high percentage of porous shell eggs. Such hens should be eliminated from the breeding pens.

Every flock owner wants his flock to lay eggs possessing good interior quality. At the same time, there is little work to show that interior egg quality affects hatchability very materially. Moreover, since it has been demonstrated that the ordinary method of candling eggs is not a reliable index of the interior quality of strictly fresh eggs, it seems highly doubtful if the average poultry breeder or flock owner could be expected to accomplish much by selecting for interior quality except by breaking out a number of eggs laid by each hen. This is hardly practical for the average breeder.

The results of several lines of investigational work have shown quite clearly that good egg production is not detrimental to good hatchability. As a matter of fact, most of the investigators who have looked into the problems have found that the best layers tend to produce the best hatching eggs. Moreover, when it is realized that the average egg production of all the birds in the United States is about 110 eggs per year, it is difficult to imagine that there are any appreciable number of flocks that lay so well that hatchability would tend to be reduced.

Even in states such as New Jersey, Connecticut, Massachusetts, Oregon, and Washington, where the hens lay an average of about 150 to 155 eggs each, there would still be very few flocks, if any, where egg production would be so high as to lower hatchability.

The observations on the relationship between egg production and hatchability is highly important to flock owners supplying eggs to hatcheries because high average egg production is one of the more important factors affecting profits in poultry keeping.

If, in addition to securing high average egg production, it is also possible to produce eggs that hatch well, the flock owner and the hatchery operator both benefit.

"OPEN HOUSE" for urban dwellers permits C. M. Gooch and Son, Tenn., to show off the turkey ranch—also to boost sales, says Capper's Farmer.

Diary of a Poultryman

By PERCY S. WHITE
Wayne County, Ohio

Condensed from Everybodys Poultry Magazine

Dec. 1 — These sick chickens sit around on the perches like criminals waiting in Death Row. And like criminals, as soon as this batch is dispensed with, there will be plenty of others to take their place. If a bird is upright and lays accordingly, she is very apt to have her innards torn out. If, by any chance, she should happen to have a slight disagreement with her neighbor and hair pulling starts in the form of a picked comb, she is likely to lose so much blood that she will die. They work for their room and board, and if they won't work, they grace the table in short order. Any way the game is figured, they are beat from the day of hatching.

Dec. 4 — A new day and a new week ahead. We went places and did things today. All the nests have been renewed with excelsior; the mash bins have been replenished, and I have 150 bushels of shelled corn ordered. It will be delivered tomorrow if the weather permits. I hope it does, for the corn is getting a wee bit low.

Sometimes it seems as if I run short of everything at one time. Feed, oyster shell, coal, excelsior and egg cases all played out at the same time. Tomorrow I am going to bring home a load of cases. If I could only take in as many full cases as I am going to bring home empties, I would be sitting Jake.

Dec. 6 — These new floats in the waterers are perfection personified. They are really not new, but are the old ones made over. Old ones of one manufacturer, revamped, and put in the tank of a different make. The water flows out across the bottom of the tank without splashing a drop on the floor litter. The flat type float allows the water to be only about ½-inch deep in the tank. This allows that little bead of water to drop off the beak and into the tank as the bird raises her head. I think that our floors are deeper this winter than they have been for several years. That is, so far this year, for the winter isn't over yet.

Dec. 8—The birds are getting the works, as far as lights are concerned. They come on at 4 a.m. and are turned off when it is light enough to see well. I learned a lesson several

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years ago about turning the lights off too early in the morning. If the birds can't see very well, they start poking around. Then they get scared and stampede, and this stampede is apt to cause a ruptured blood vessel. There is no cure for a ruptured blood vessel; the bird bleeds to death internally. A laying bird is chuck full of blood and, often times, it doesn't take very much of a blow to do serious injury.

Dec. 9—It seems to me that the weeks slip by pretty fast. Here it is Saturday night again, and I am all cleaned up and shaved as slick as a peeled onion. I don't know that so much has been accomplished during the week, but the regular work has been done on schedule. There are no manure piles or piles of litter around the houses.

Yesterday I was out in the car and saw several poultry houses with piles of litter in front of them. The owners had cleaned the houses, but had just got the litter out of the house. It was out, but still against. Such a method of procedure is better than no procedure at all, but it doesn't make a very pleasing appearance.

Dec. 12 — Five-gallon paint cans make dandy feed buckets. We use them altogether for mash. There are two in the west house, two in the block house and two in the barn. One of the block house buckets has had a leaky bottom for several days. Dave Harris, down at the paint company, gave me a couple that had contained roofing paint. I brought them home on the return load. Scraping the paint out with a putty knife was too slow, so I conceived the bright idea of burning it out. The net result — loss of time, a burned finger and a still dirty bucket. The proverb of the hare and the tortoise still holds true.

Dec. 13—I can't quite understand why these birds would rather lay on the floor and the perch screens than in a nice clean excelsior-lined nest. But it is a fact that some of them do, and it is also a fact that such a practice is a nuisance. The old hens are worse than the pullets. They seem to take delight in laying all over the floor, just any old place. Of course, the eggs get dirty. Then the girls growl about cleaning them and Inspector Harold Sidle growls about washed eggs. And it all goes back to the fact that the birds like to lay on the floor. If I could only reason with them, it might be a different story.

Dec. 15—I saw something tonight that I have never seen before — two air cells in the same egg. I have seen irregular air cells, but this egg had two distinct air cells, one on each side of the large end. Each air cell was about the size of the normal 24-hour-old egg. Occasionally, an egg is found with the air cell in the small end, but this is rather rare. Double yolks are beginning to pile up. I am saving them for Christmas presents. A dozen double yolk eggs makes a rather nice present a few days before Christmas when heavy baking is the order of the day.

Dec. 19—I cleaned up in the egg room last night. About every so often it needs a good "redding" up. All offal eggs, blood spots, cracks and doubles were sold on today's auction. There should have been about $5.00 worth and I think that this can be considered as pin money in a way. Such grades are considered by-products. Everyone gets a few, at least, of all three grades, in spite of everything that can be done.

Dec. 20 — The clean-up in the woods is coming along in good shape. There are several large piles of brush to burn, but I think it will be better to wait until chick brooding time to burn them. The range will look better this spring than it ever has.

Dec. 21 — White pine shavings make better nesting material for the tunnel type nests than oak shavings. We have had to take out all of the oak shavings because the eggs became soiled. It was impossible to get them clean. If the shavings happen to get damp from occasional droppings or broken eggs, the eggs become stained. White pine shavings, on the other hand, won't stain the eggs, even if they do get damp.

Dec. 22—I went all over the ranch this morning with a large putty knife and scraped the mash feeders and waterer running boards. About every so often, droppings accumulate on them. I think that some of the litter clings to the birds' feet and becomes cemented down. It doesn't take very long to do such work and it certainly does pay big dividends in appearances and, I hope, comfort to the birds.

Dec. 25—There wasn't much sleep in this household last night and not very much rest for the Old Man today. But it has been a grand and glorious day. Donnie and I carried on the regular work, only doing that which was absolutely essential. No new projects were undertaken and we didn't complete any unfinished jobs. The stock was not neglected, however. All the chickens, cows and sheep had their meals on time and their drinking water was warm.

Dec. 26—I think everyone on the ranch feels a trifle let down today; suppose it was two big meals yesterday. The work went a little slow this morning, but towards sunset we all perked up a wee bit. I guess we were like a mule that plods along all day, but when quitting time comes wants to run to the barn. There seemed to be a lot of cracked eggs today. I can't quite understand why, but the fact remains that there were. Probably we had better put on another campaign for the prevention of cracked eggs.

Dec. 27—Water wells in this area are getting low due to lack of rain. Even springs that have never been known to go dry have ceased to flow. Fortunately, we have plenty of water; at least, so far.

Dec. 29 – I met an enterprising chicken man at the auction this morning. He said that his birds were not doing very well this winter. The pullets started off very well last fall, but they began to slow down in production. Feed was high and the eggs didn't bring very much, so he had to reduce expenses. His home-made mash is composed of ground oats and corn and cob meal. The grain mixture is corn and whole oats. Said it didn't seem to do any good to turn lights on them, so he reduced expenses still further. He is culling them, sold three coops on yesterday's sale.

Dec. 30—This night work is quite a chore at that. Before going to bed, I always go out and look over the ranch. I take two buckets of hot water from the house to the cows. I dilute it with cold water at the barn and also give the cows some hay. Then I go to the block house and the west house to look at the stoves. Kid White prepares a light lunch which she leaves on the dining room table. After partaking, I am ready for bed.

Requirements for Poultry Keepers

Commercial poultry keeping is rather a highly specialized business. It requires first and foremost a liking for the work.

The second requirement is a rather considerable specialized knowledge and a sufficient mastery of a number of skills like plumbing, electricity, carpentry, etc., to perform the necessary tasks of this nature required on a poultry farm. Feeding, culling, brooding and rearing, controlling parasites and disease, keeping books, and knowing how to buy and sell are not difficult if one knows how. But one does need to know how.

There probably is no branch of farming today that pays the skilled operator better than poultry keeping. But it is by no means a sinecure, as many have found out. As in most other businesses, one gets out of it what one puts in of ability, knowledge, skill and hard work. These are what boost labor income and so beget success.

—Nulaid News, Oct., 1940.

Who's Eating Chicken?

By RILEY ELGEN

Condensed from Poultry Supply Dealer

SINCE the food bill of families of different incomes is the largest single outlet for the family funds, it is a matter of no little importance to the bread winner of all families. In fact, it is the money that goes in the food bill that causes more gray hairs to him than any other items of family expense.

A recent study by the National Resources Committee shows that from 19.4 per cent to 65 per cent of family incomes, varying from $4,391 to under $500 annually, is spent for food, as is shown in Table 1.

Of the family food bill, poultry is a most important factor. Table 2 gives an excellent idea of how important poultry is to the family larder.

Table 1

	Family Incomes	Part of Each Income Dollar Spent for Food
		Cents
	$4,391	19
	2,715	25
	2,221	28
	1,612	33
	1,120	39
	874	44
	312	65
Avg.	$1,622	33.3

Table 2 shows the amount spent per person weekly on all other meats and meat products as compared with different kinds of poultry purchases.

Of course, everybody in the poultry business knows that New Yorkers are greater poultry eaters than folks of any other city, but few realize the great disparity in the contrast as shown in Table 2. Nearly 29 cents out of the New Yorker's meat dollar is spent for poultry. Contrast that with only 4.8 cents spent out of the meat dollar of San Diego people, and you really begin to understand what a market for poultry New York really is. The table shows the other big poultry markets in the order of their importance.

Broilers are Big Sellers

The choice of chickens is broilers, while roasting and stewing chickens divide honors for second place. Of the total consumption of meats of all kinds, 9.6 per cent of the family expenditures for meats is made in the purchase of poultry.

Table 3 shows how much the average wage earner and clerical worker spends of his food dollar on different kinds of food.

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(Poultry Supply Dealer, November, 1940)

Table 2

Cities	All Others Meats	Chicken Broilers	Chicken Roast	Chicken Stew	Turkey and Others	Total Poultry
	Cents	Cents	Cents	Cents	Cents	Cents
Boston	60.1	2.4	2.5	3.4	0.2	8.5
Buffalo	63.4	1.5	1.3	1.3	0.2	4.3
Johnstown	32.9	.6	1.2	0.3	3.1	4.4
Lancaster	52.2	1.1	1.8	2.2	0.7	5.8
Philadelphia	55.9	2.5	1.8	2.6	1.0	7.9
Pittsburgh	48.8	1.1	2.5	1.2	2.5	7.3
Portland, Maine	62.5	.3	.6	.6	0.1	1.6
Scranton	41.9	1.7	2.3	.9	0.3	5.2
Rochester	57.3	2.6	2.1	1.9	0.2	6.8
New York	56.7	9.7	5.9	6.0	1.4	23.0
Denver	58.2	2.4	1.0	2.0	.6	6.0
Kansas City	42.9	.3	.8	1.0	0.2	2.3
Minneapolis	50.4	.5	1.3	.7	—	2.5
St. Louis	62.8	1.2	1.4	1.0	.2	3.8
Salt Lake City	35.0	.8	.4	.5	—	1.7
Los Angeles	51.8	1.1	1.6	1.0	.1	3.8
Sacramento	55.5	2.1	.4	.7	—	3.2
San Diego	49.8	.9	.5	1.1	—	2.5
San Francisco	69.8	2.3	1.2	3.4	.2	7.1
Seattle	45.4	1.3	.5	1.7	—	3.5
Avg.	53.8	1.8	1.7	1.7	0.5	5.7

—Less than 0.1 cents per person weekly.

Maybe that figure of 2.2 cents out of each food dollar doesn't impress one as a very important item; so let us translate these preparedness program dollars, of which we hear so much nowadays, into poultry terms of the wage earners and clerical workers who will work on the 10-billion-dollar program of making this nation safe against invasion.

From studies made by the government and by the writer, we know that business and industry pays out seven-eighths of each national income dollar to wage earners, clerical workers, technical and general officers. So we can calculate that 8,750,000,000 of these national defense dollars will find a temporary resting place in the pockets of those who actually work by the sweat of their brows to forge the thunderbolts for our military, naval and air forces.

Table 3

Kind of Food Product	Average Amount of the Consumer's Food Dollar Spent, in Cents
Poultry	2.2
Grain products, bread, etc.	17.0
Eggs	5.3
Milk, cheese, etc.	12.7
Fats, butter, lard, etc.	11.8
Meats, fish, other than poultry	20.1
Vegetables	19.7
Sugar	3.9
Coffee, tea and miscellaneous	7.3
Total Food Dollar	100.0

$64,167,400 to Poultrymen

According to well-known patterns of spending family income, we are able to say with perfect confidence that $2,916,700,000 of the wage earners' and clerical workers' income from work performed in connection with the preparation of the nation to defend itself will be spent for food. We have shown that 2.2 cents of each food dollar is spent for poultry, so we can say with equal assurance that, of the 10 billion preparedness dollars, about $64,167,400 will find its way into the hands of those who buy and sell poultry. This amount does not find a resting place in the pockets of those selling groceries, meat marketers and the like. They in turn must buy from the wholesaler, the farmer and others who sell them poultry they need to supply their customers.

An analysis of what the government investigators' survey shows is worthy of the time and attention not only of those who sell poultry to the consumers, but also of those who raise poultry for the markets.

Look at the bare facts of consumer purchases of poultry in Philadelphia, where those families in the lowest income bracket purchase one dollar's worth of poultry for each four dollars' worth by families in the highest income brackets, and two dollars' worth by families in the intermediate income brackets. In the bean-eating city of Boston, the ratio from the lowest family income brackets to the highest, as outlined above, is $1.00, $1.80 and $6.10. New York families' ratio of poultry buying is $1.00, $2.55 and $3.75.

Low Income Groups Eat Poultry

About 54 families out of each 100 must get along on $1,250 per year.

Table 4

City	Pounds of Poultry Bought Annually by a Family of Four
	Pounds
New York	151.2
Boston	62.8
Philadelphia	59.7
Pittsburgh	55.7
San Francisco	55.3
Rochester	53.9
Denver	51.0
Lancaster	43.3
Johnstown	35.6
Buffalo	33.5
Seattle	30.0
Los Angeles	29.5
Sacramento	27.7
Minneapolis	19.3
San Diego	18.9
Kansas City	18.7
Salt Lake City	15.4
Portland, Maine	11.2
Avg.	42.9

In fact, only eight families out of each 100 have as much as $3,000 annually to live on. From these facts you can see the absolute necessity of studying the possibilities of selling poultry to these lower income groups. Apparently, New York merchants know how to solve that marketing problem, in part. Their reward is the largest of that of any poultry market in America. Lots of people think this market is with the well-paid executive group or with the household of the well-established business man. Our examples plainly show that such is not the case, but rather that it lies in the lower bracket of family incomes.

According to the National Resources Committee, the average American family has an income of around $1,622. This includes not only the income of the most lowly WPA worker, but also that of the Morgans, Rockefellers, Vanderbilts, etc.

It might be helpful to show the pounds of poultry which the survey shows a family of four bought annually in the several cities.

Looking up and down this table, one realizes that there is a problem for the poultry dealers of America to decide, that is, how can they create better markets? Why do Bostonians eat nearly twice as much poultry annually as do Buffalonians? Why do the large poultry-raising areas of the country many times show up as having the lowest consumption of poultry, per capita? Perhaps here are some of the answers for which the poultry industry has been searching.

Limberneck in Poultry

Botulism in fowls is usually a very acute disease, and may appear very suddenly in a flock, with heavy losses, according to veterinarians in the Pennsylvania Bureau of Animal Industry. It is characterized by marked weakness and is commonly called limberneck, because the affected birds usually lose control of the neck muscles and are unable to hold their heads erect.

The disease is caused by the poisonous products or toxins of a bacterial organism that thrives in decomposing animal and vegetable matter. The germs of botulism are widely distributed in nature and are responsible for many outbreaks of so-called food poisoning of man. Unlike most disease-producing organisms, the germs of botulism do not multiply in the body, but rapidly multiply in decaying carcasses of animals and spoiled vegetables, in which they produce a powerful poison or toxin.

The disease is produced only in the birds which eat materials containing the toxin. However, a very small amount of it is necessary to cause death, because this toxin is one of the most poisonous substances known, and minute amounts of it are highly fatal to poultry. Fly maggots found in the carcasses of dead animals often contain enough of the toxin to be fatal to birds eating them.

Botulism occurs most frequently in poultry flocks as a result of the birds feeding on decomposing carcasses of animals, such as dead chickens, hogs and rats. The disease may also be caused by fowls eating spoiled canned goods or decaying vegetation in stagnant water. Because warm, rainy weather favors the processes of decomposition and toxin production, the disease is more prevalent during the summer and fall months.

All poultry may be affected by the disease, however, it is most frequently observed in chickens and ducks. It may also occur in wild birds.

The appearance of botulism or limberneck in a flock is usually very sudden and, in characteristic outbreaks, large numbers of the flock are found affected shortly after the flock has appeared to be in a healthy condition. Many birds may die in a short period of time, and the living affected birds exhibit a marked weakness or extreme prostration.

The extent of the losses in outbreaks of this disease is dependent upon the number of birds eating fatal amounts of the toxin. Thus the mortality may vary from a few deaths to a catastrophe involving the entire flock.

Treatment of birds in advanced stages of the disease is of little value. If an outbreak of the disease is suspected, a veterinarian should be consulted, and steps taken immediately to remove all possible sources of the toxin from the flock. The injection of botulinus anti-toxin is of some value in birds in the early stages of the disease.

—Pennsylvania Department of Agriculture
Weekly News Letter, October 10, 1940.

When to Market Cull Hens

When a hen quits laying and starts to molt, she not only drops feathers but her intestines and other internal organs shrink quite a bit in size and weight. And, if the molt is quick, she loses flesh from all parts of the body.

This means that good marketing of cull hens has to be done right along, throughout the year. It means watching the birds and catching them as soon as they go out of production and not two weeks later. The best way to spot these hens is to watch the roosts in the daytime and look for the birds whose combs are beginning to shrink down. Also look at the back of the beak. When a bird quits laying, yellow color begins to come in back there in the corner of her mouth.

The best market months are the first 5 months of the year and the month of September.

—J. C. Huttar, American Agriculturist, Dec. 7, 1940.

POULTRY RESEARCH

Colloidal Sulphur of Value in Control of Coccidiosis

Aqueous colloidal sulphur was found to be of value in the control of Eimeria Tenella, a specie of coccidia which attacks brooder house chicks between the ages of 3 and 10 weeks, according to a report in Poultry Science, Vol. 19, No. 6. Cliff D. Carpenter, giving results of tests carried on at the University of Kentucky, states that 10 per cent aqueous colloidal sulphur solution in the mash provided protection against mass doses of from 1,500 to 15,000 oocysts with little evidence of kidney involvement, and did not adversely affect growth during the 24-day period.

The conclusion was: "Exposure to natural infection for 29 days in the brooder house failed to produce lesions of coccidiosis in chicks when the mash contained 10 parts of a 10 per cent aqueous colloidal sulphur."

Manganese Not Sole Perosis Factor

Studies of perosis, or deforming leg-weakness (hock-disease) in chickens at the Oklahoma Agricultural Experiment Station have shown that this condition is not always caused solely by a low intake of manganese. (Oklahoma Agricultural Experiment Station Bulletin 243.) In these studies, a ration was developed which was effective in producing perosis in over three-fourths of the chickens to which it was fed.

A drinking solution consisting of the water extract of rice bran prevented perosis in nearly 100 per cent of the chicks involved. Water extracts of wheat bran, wheat shorts, wheat embryo, and alfalfa were of no benefit.

The chicks consuming the water extract of rice bran were larger, smoother, and had better-colored shanks than the control group.

Phosphorus introduced subcutaneously caused the development of perosis just as effectively as phosphorus fed in the ration. The addition of calcium to the ration likewise was associated always with increased perosis.

It is clear from these tests that the amount of calcium and phosphorus fed influenced the amount of manganese required to prevent perosis.

—L. E. Card, Poultry Tribune, December, 1940.

Riboflavin Synthesis in Chickens

Chickens, unlike cattle and rats, cannot synthesize riboflavin in their bodies, report W. F. Lamoreux and A. E. Schumacher of Cornell University in Poultry Science, Vol. 19, No. 6.

Feces from laying hens contained no more riboflavin at the time of defecation than was present in the feed from which they were produced. An approximate increase of 100 per cent in riboflavin content occurred when feces were held at room temperature for 24 hours. The short period of time that feed is held in the body of a chicken is deemed responsible, to a large extent, for the lack of riboflavin synthesis. In carrying out the tests, the investigators learned that the dry weight of droppings ranged between 39 and 46 per cent of the weight of feed consumed.

Effect of Riboflavin Supplements on Chick Growth and Curled-Toes

The addition of dried skimmilk to a riboflavin deficient diet resulted in greater growth response per unit of riboflavin added than did the addition of crystalline riboflavin, indicating that dried skimmilk possesses growth-promoting properties greater than can be ascribed to its riboflavin content, report Thomas G. Culton and H. R. Bird in Poultry Science, Vol. 19, No. 6. Tests carried on at the University of Maryland showed that the growth response per unit of riboflavin added was no greater when dried whey was fed than when crystalline riboflavin was fed.

The studies indicated that the requirements for riboflavin of the larger breeds may be larger than for White Leghorns. Curled-toe paralysis has been frequently observed in commercial flocks which have been fed supposedly adequate diets, which may mean that riboflavin requirements for growing birds are higher than has been previously supposed.

During the course of the experiments, a higher incidence of curled toes in groups of chicks which were growing more rapidly than other groups suggested a relationship between rate of growth and incidence of curled toes.

The investigators point out the dangers involved in substituting feedstuffs lacking riboflavin in chick feeds.

Lack of Vitamin Not Always Found When Symptoms are Typical

Graying white spots on the mucous membranes of the mouth and esophagus do not necessarily indicate a deficiency of vitamin A, report Pennsylvania State College investigators W. T. S. Thorp, W. J. Rudy and R. V. Boucher in the American Journal of Veterinary Research, Vol. 1, No. 1.

The lesions described were found to occur in groups on diets containing high and low levels of vitamin A and high and low levels of riboflavin. Because of the possibility of making a faulty diagnosis, it is recommended that caution should be exercised so as not to confuse the condition with a vitamin A deficiency.

Effect of Minerals and Vitamin D on Bone Ash of Young Chicks

Chicks maintained on a diet believed adequate in minerals and vitamin D showed an increase in bone ash percentage from 36.1 to 44.4 per cent in nine days, while similar chicks on a diet deficient in vitamin D and minerals decreased to 28.4 per cent of bone ash in 10 days, according to a report in Poultry Science, Vol. 19, No. 6, on the work of J. W. Cook and E. I. Robertson, Washington Agricultural Experiment Station.

When the depleted chicks were fed an adequate diet after the tenth day, the bone ash percentage increased to 32.9 per cent in 4 days, while in chicks continued on the inadequate diet, the bone ash percentage decreased to 22.7 per cent at 15 days of age.

Lespedeza as Alfalfa Meal Substitute

Trials at the South Carolina Agricultural Experiment Station indicate that lespedeza meal may be substituted for alfalfa meal in poultry rations. (Clemson Agricultural College, Extension Circular 185.) It is suggested that the meal be prepared by running lespedeza hay through a hammer mill with a 1-16-inch screen. Varieties mentioned as suitable are Korean, Kobe, and Tennessee 76. The lespedeza should be cut just before blooming, and should be free as nearly as possible from weeds and grass. The hay should be cut a few inches above the ground to avoid the coarse stems which have little or no feeding value. The objectives in curing are to retain the green color and to avoid shattering of the leaves.

—L. E. Card, Poultry Tribune, December, 1940.

Dried Skimmilk Equal in Value to Meat and Bone Scraps

Dried skimmilk and meat and bone scraps are of about equal value as regards growth, efficient use of feed, and percentage of mortality, when these feeds are supplementing soybean oil meal, according to R. M. Sherwood and J. R. Couch, Texas Agricultural Experiment Station, reporting in that station's Bulletin 569.

Dried skimmilk produced larger gains in live weight and a smaller percentage of deaths than did meat and bone scraps, when these feeds were supplementing soybean oil meal and sardine meal. Mortality in the groups receiving meat and bone scraps in the latter test was excessive.

Turkey Grain and Mash Preferences

Turkeys given a free choice of corn, wheat, oats, and barley consumed a greater proportion of grain to mash than did birds which received only corn as the grain in their ration, report F. N. Barrett, C. G. Card, and Ashley Berridge of the Michigan Agricultural Experiment Station, in Michigan Quarterly Bulletin, Vol. 23, No. 2.

When mash was used with corn as the only grain, turkeys consumed about 70 per cent mash and 30 per cent grain. When the same mash was used with a free choice of four grains, the grain consumption increased to 49.6 per cent and 57.6 per cent in the 1938 and 1939 trials, respectively.

Effects of Age and Weight on Composition of Turkeys

Unless conditions make it desirable to produce an especially fat bird, it is best to market turkeys by the time they are 28 weeks of age, conclude H. M. Harshaw and Robert R. Rector in Poultry Science, Vol. 19, No. 6.

Extensive tests carried on at the Bureau of Animal Industry's Beltsville Research Center showed that, although the percentage of dressed weight and drawn weight increased with the age of live birds, there was an accelerated deposition of fat under the skin and around the abdominal organs of birds over 28 weeks of age, making for a higher percentage of fat in older birds.

The relative quantity of breast muscle increased and that of leg muscle remained practically the same up to the age of 28 weeks, after which the percentage of these two portions in the dressed carcass was lower. The percentage of total edible portion in turkeys was found to be about 15 per cent higher than in chickens. Otherwise, the physical composition of the two species was approximately the same.

Soybean Oil Tolerance of Chicks

When soybean oil was fed to 12 lots of chicks in quantities ranging from 0 to 22 per cent of a basal mash diet, it was found that the mean weight of chicks at 8 weeks of age did not vary until the ration contained 10 per cent of oil. In chicks fed higher percentages of oil, a significant negative regression of weight was obtained, says a report on Iowa Agricultural Experiment Station project 511, appearing in Poultry Science, Vol. 19, No. 6.

Investigators Earl W. Henderson and W. E. Irwin found that there was no significant difference in weight of livers, volume of gall bladders, or histological sections of livers taken from chicks of various groups. No odors or flavers of soybeans were detected in the broiled carcasses or fat residues of any of the chickens. Excessive moisture in the feces was noted in the oil-fed groups. Excessive molting beginning at the sixth week was noted in lots fed more than 14 per cent of oil.

Small Size of Flock Limits Opportunities in Breeding

Small size of the breeding flock limits the opportunities to select for desirable characteristics with the result that progress is slow, according to F. A. Hays, Massachusetts State College, in Poultry Science, Vol. 19, No. 6.

Starting with a foundation of 45 pullets and 27 cockerels (Rhode Island Reds) and selecting for characteristics associated with high egg production, no appreciable progress was made after eight generations.

Observations on Use of Fowl and Pigeon Pox Vaccines

Comparisons of various vaccines and methods of applying them in attempting to produce immunity to fowl pox resulted in the conclusion that potent fowl and pigeon pox vaccines properly administered to healthy fowl produce a measurable immunity, report Robert Graham and C. A. Brandly in University of Illinois Agricultural Experiment Station Bulletin 470.

It was found that immunity produced by the application of fowl pox vaccine, stick method, is of longer duration and is better defined than the immunity obtained by the application of pigeon pox vaccine by the feather-follicle method. Pigeon pox vaccine can be used with less risk than fowl pox vaccine, but it provides only a modified protection against the disease.

The investigators state that it seems inadvisable to vaccinate laying flocks not exposed to fowl pox with fowl pox vaccine, although pigeon pox vaccine can be employed without harmful effects. On contaminated premises, vaccination of fowls at 4 to 8 weeks of age is recommended. In some cases, it may be desirable to precede fowl pox vaccination by the application of pigeon pox vaccine.

How to Make Turkey Steak

SINCE Colonel Paul V. Renz, Missouri farm commissioner, started experimenting with new methods of preparing turkey, says Jewell Mayes, commissioner of agriculture of Missouri, such progress has been made that turkey steak, Renz's choice discovery, is now appearing as a regular feature on many hotel and restaurant menus.

According to Commissioner Mayes, Dick and Tom Clark, of Clark Turkey Farm, McBaine, Mo., are responsible for the name "Turkey Steak," and have done much to

perfect the method of preparing the new delicacy. The brothers have applied for a patent on their process.

Turkey steak didn't just happen. Extensive tests on methods of cooking, determination of ideal weights, and many experiments on the length of time to hold dressed birds have been made in order that a superior product, which would have a universal appeal, might be found.

Practical tests on methods of frying the sliced turkey roll have been made by Floyd Reese, chef at the Daniel Boone Hotel, Columbia, Mo. The dressing and cooking procedure now being followed at the Daniel Boone is as follows:

How to Prepare It

"Kill a 15 to 35 pound, grain-fed, fat, young, turkey in the usual manner. Remove the bones, starting at the point of the breast bone, taking off one-half the breast at a time, leaving the meat in one piece. Bone the legs, removing all tendons.

"Remove all skin and fat from the meat thus obtained. Cut the meat across the grain in slices not to exceed 1½ inches thick. At the Daniel Boone, they get about three orders to the pound. Beat the slices against the grain using a cleaver or tenderizer. Both dark and white meat should be pounded, but care must be observed so that the tissues of the meat is not too severely broken down. After pounding, season the meat with salt and plenty of black pepper. If white pepper is preferred, use still more. Drop each piece into an egg wash and roll in flour. Fry about the same as you would chicken, but cook very slowly, until the steak is a golden brown. Pure lard is recommended for frying. After the steak is golden brown in color, remove it from the pan and steam for about 20 minutes before serving.

Turkey Gravy on the Side

"Turkey gravy is now accepted as being essential to the full enjoyment of turkey steak. To prepare this, use the brown crumbs from the bottom of the pan in which the turkey steak has been fried. Leave a little of the fat in the pan, add flour, and brown over a low flame. Pour in a rich turkey stock and let the mixture thicken. This may be seasoned and served separately, or with turkey on toast.

"Turkey steak is often spoiled by being cooked too rapidly or for too long a period. The steaming process improves the finish of the pieces and should be used wherever possible. In kitchens not equipped for steaming, the meat can be put in the oven and kept hot until served."

Commissioner Mayes declares that turkey steak is the meat of kings. He says it is finer flavored and more delectable than the famed baked-in-wine peafowl of ancient empire days.

Sawdust-Concrete Test Results

By L. W. NEUBAUER
University of Minnesota

Condensed from Agricultural Engineering

THE object of the experiments discussed in this paper was to determine scientifically some of the critical characteristics of a concrete made of cement, sawdust, and water. Sawdust is known to be of organic nature and therefore undesirable in concrete because of its effect of slowing up or preventing the setting of portland cement. It has generally been considered unreliable as a constituent in mortar or concrete. A recent popularity and interest in its use has been in evidence, however, and this study was made in an effort to determine more facts concerning its strength and utility.

Experiments in other states (New Hampshire, Oregon, Pennsylvania, and Indiana) have worked principally with floors in poultry houses and hog and dairy barns. At Minnesota, the first experiment was made by placing a sawdust-concrete floor in a hog barn with such unfavorable results that the technical laboratory studies were considered of great value.

A total of 698 test cylinders of sawdust-concrete were made in the agricultural engineering laboratory, using 14 samples of wood of 11 different species. These cylinders were principally 2 inches in diameter by 4 inches in length, proportioned, mixed, placed, and cured in accordance with standard methods. A number of variables such as kind of wood, size of particles, proportions, water-cement ratio, age, and method of curing, were observed and recorded. These data must be omitted here because of their volume and complexity.

General Characteristics

General characteristics of cement-sawdust concrete were found to be similar to concrete made with sand and gravel. Compressive strength varies with the mixing proportions. Some were mixed of room-dry sawdust, water, and cement, while others were made of sawdust saturated in water overnight. The weight also varies with the mix, cement being heavier than sawdust. Cement-sawdust mixes of 1:5 are usually very weak, probably suitable only for non-load-bearing purposes such as insulation and fill. Samples of 1:3 or 1:3.5 mix are much stronger, yet good insulators, and might be used for floors or walls of poultry houses, hog barns, or dairy barns. Mixes of 1.2 or 1:1 are so expensive, heavy, and poor in insulating value that they could not be found economical in competition with common concrete.

American Society of Agricultural Engineers, St. Joseph, Mich.
(Agricultural Engineering, September, 1940)

Absorb Water

An extremely high absorption of water is characteristic of sawdust-concrete up to a maximum of 70 per cent of the dry weight for lean mixes. This reduces the insulating value and strength and prohibits its use on surfaces exposed to the weather. In general, the strength varies inversely with the absorption.

The period of curing in water affects the strength considerably. Satisfactory specimens attain a considerable strength in 24 hours, but continue to gain strength for many months. It is interesting to note that the weight also appears to vary slightly with the curing time, probably because of a continued chemical action of the cement.

Advantages

The principal advantages of sawdust-concrete are low cost, light weight, insulating value, nail-holding ability, and resistance to freezing, burning, and termites.

The low cost is obvious. Sawdust could not be considered as an aggregate, except where its value is negligible.

Light weight in walls or ceiling reduces the load to be supported. The dry weight varies principally with the proportion of cement from about 40 to 70 pounds per cubic foot. Most specimens will float in water for a short period before absorbing enough water to sink.

Insulation value is inherent because of low density. Thermal conductivity varies with the weight, proportion of cement, and water absorbed. Although the density is greater than that of wood, the conductivity is relatively less because of its granular form.

The material has good nail and screw-holding characteristics, far superior to those of concrete or masonry but not equal to wood. For lean mixes (1:5) the holding strength is not great and weakness permits occasional splitting. For rich mixes (1:1 or 1:2) nailing is difficult as the hardness then approaches that of common concrete.

Resistent to Cold

Resistance to freezing was tested by subjecting the cylinders to repeated cycles of alternate freezing and thawing in water. This test often exposes weaknesses in tile or concrete after 30 or 40 cycles. The lean sawdust-concrete specimens developed some scaling at 15 cycles and at 36 cycles the 1:5 cylinders began to crack open. The richer mixes developed no cracks at 50 cycles showing only a slight weakness on the lower submerged corners and in the subsequent compressive test generally proved stronger than cylinders tested after shorter curing.

In a test of fire resistance, the lean (1:5) cylinders proved to support combustion, burning slowly and completely to ash. Richer mixes did not support combustion, but when heated red hot in a furnace proved fire resistant and non-inflammable. They showed some weakness, however, turned black, and developed cracks and breaks.

A colony of termites was confined with a cylinder of 1:5 proportions. The termites appeared to live on this material for a time, but soon lost their vigor and strength and all succumbed within two months. The other mixes would obviously be even more resistent to termites.

Disadvantages

The most apparent disadvantages of sawdust-concrete are low strength, high absorption of water, lack of fire resistance for lean mixes, great variation in strength with different woods, and relatively short life.

The uncertain durability of this material in use is demonstrated by the experience of a number of persons. I. D. Mayer of Purdue University reports that two dairy barn stall floors built of 1:2:2 proportions of cement, sand, and sawdust, proved no warmer than other concrete floors, showed "very noticeable wear under the cattles' feet" after two years and will soon have to be replaced.

J. R. Haswell of Pennsylvania State College, however, reports a floor of 7:9 mix showing no wear after 10 years and another, built in 1912, still good.

At the University of Minnesota, one floor slab of 1:3 pine set firmly overnight while another of 1:3 cottonwood hardened very slowly. These were wet down down for one week and protected for another week when pigs were admitted to the pen. The second slab had not yet fully set but seemed to harden under the pressure of the pigs' hoofs. Within 12 days, however, two pits were worn into the cottonwood sawdust concrete which required immediate patching. All surfaces of this material showed continual wear and pocking. After four months time, another pit 11 inches across developed in the 1:2:3 mix of cement, sand, and sawdust when the pen was used by a single boar, and likewise required patching.

This experience with mixtures including some sand suggested that they might be of little advantage. In the laboratory compression test. 1:2:3 and 1:1.5:3.5 mixtures proved but half as strong as 1:3 and 1:3.5 sawdust mortars and only approximately equal to a mix of 1:5. The weight is much greater. Apparently these mixes do not prove superior to similar mixes exclusively of cement and sawdust, although there might be some gain in wear or durability. To retain the necessary strength, additional cement would be required to balance the portion of sand.

Water-Cement Ratio

The importance of water-cement ratio proved much greater than was expected. The ability of dry sawdust to absorb considerable water increased the water-cement ratio over that for ordinary concrete. Ratios of 2 to 2½ were needed for lean mixes. For average mixes, ratios of 1 to 1.25 proved more suitable. These were the most workable proportions. Sloppy mixes were much weaker. The actual water requirement varies so much with the moisture content of the sawdust that water-cement ratios are difficult to predict.

Size of sawdust particles has been considered influential upon strength of the product. Large, coarse, hard particles are usually recommended. Norway pine of this description proved excellent. All sawdust was screened through a ¼-inch sieve. Small, flaky chips of cottonwood (1:3) tested practically zero. Consequently cottonwood was obtained in large, coarse particles, having a sieve analysis similar to that of Norway pine. The result was the same—strength negligible. Fine and coarse samples of red oak sawdust were also used, both testing zero. The Norway pine was then divided into fine and coarse portions by separating with a No. 14 screen. Resulting mixes showed only a 15 per cent advantage for the coarse particles. Both were slightly inferior to the original sawdust. These data showed that the kind of wood was more important than the size of the particles.

Kind of Wood

Cottonwood sawdust developed unsatisfactorily weak products, except for very rich mixes. Norway pine, even when mixed lean, proved much more satisfactory. This corroborated the theory favoring softwoods (conifers) over hardwoods (deciduous trees). On the other hand, aspen (popple), very similar to cottonwood, proved much stronger, nearly equalling the better group of softwoods. It is true that red oak (1:3.5) tested zero, and birch and maple were not much better. However, Douglas fir also tested zero, with red cedar, green jack pine, and Ponderosa pine considerably inferior to aspen. Thus many softwoods are not suitable. Recommended species are spruce, Norway pine, jack pine, and aspen.

THE THANKSGIVING turkey eaten by the Cudy Reidels, Eureka, Calif., was self liquidating. They paid $3.65 for it, and in it they found a gold nugget worth $4.86, according to newspaper reports. At Peoria, Ill., Carl Kaebel found a silver dollar in the gizzard of his turkey.

Fowl Language

Hail to the Hen and her feathered compatriots! They have certainly influenced our every-day speech. You'll be surprised at the fowl language you unconsciously use!

Everyone is familiar with that pathetic, national figure, the "hen-pecked" husband. And anyone who has been pecked by a hen knows that it is no fun, whether it happens to be his wife or the real "bird" who gives him the dig. This, of course, brings to mind those "ducky" little get-togethers them women go for, so aptly know as "hen parties." All the "cackling" that goes on at these affairs seem to lend credence to the thought that many women have "about as much sense as a chicken with its head cut off."

You may be "proud as a Peacock" and "cocky as a bantam rooster," but you'd better not tell that "old hen," your mother-in-law, that she "waddles like a duck!" Junior can gaze at a streamlined bit of feminine pulchritude and emit a heartfelt, "Gee, isn't she some 'chicken'?" Let hubby express the same sentiments and his wife is quite likely to become "as mad as a wet hen." Do the youngsters "peck" at their food? Then "egg them on." If you get any results, that's "something to crow about!"

Have you ever taken a "gander" on the stock market? Well, "don't count your chickens before they are hatched." If you win, "the goose hangs high." If you loose, "your goose is cooked." The next time you tell a joke, don't be so "cock sure." You may "lay an egg." When it comes to choosing a family doctor, just remember that you are "a big egg" if you go to a "quack."

Don't be "chicken hearted!" Join the army now and get valuable experience. Remember, there's no "goose-stepping" in the U.S.A.! That should "warm the cockles" of any man's heart. As for myself, I don't feel quite "up to scratch."

Yes, ours is certainly a fowl language. But what can you expect of a people who cut their teeth on "Humpty-Dumpty" only to grow up to follow the cavortings of a "Donald Duck?"

—F. Denman Arnold, Everybodys Poultry Magazine, November, 1940.

◀◀ AN AWARD was given the persons attending the Oregon State Fair whose hair most nearly matched the feathers of the champion Rhode Island Red Cock in color, says the Western Poultry Journal. Something new in a red head contest that, and good poultry publicity.

VIEWS OF THE EDITORS

Better Stock and Better Methods are the Answer

With production per hen running to new high levels in this country, the need for stock that will produce more eggs, and do it economically, becomes greater. This is something that can be taken care of by getting stock from those ambitious, skillful, and dependable breeders who are devoting their lives and equipment to developing just that kind of stock.

But even the best of stock cannot live up to its capabilities unless it is well housed, well cared for, and well fed. The one who makes a study of these important items, and makes good use of his experience and that of other poultrymen, is the successful egg producer of the future, even the present.

—Poultry Herald, Nov. 1940.

Needling Poultry

We are glad to hear that one firm attempting the fraudulent practice of "needling" poultry has been prosecuted successfully by the federal court. "Needling" consists of injecting, by hypodermic needle, water under pressure, into the breasts, leg joints and other parts of freshly-killed poultry. The plumped-up birds are thrown immediately into ice-cold water, causing the liquid to jell. It has been said that a hen's weight can be increased 30 per cent and that cull birds can be worked off to a good advantage.

During the past few months we have carried several complaints to the Indiana State Board of Health bureau of foods and drugs, resulting in investigations. We received one report that a hotel suffered an 18-pound loss on one barrel of turkeys purchased from a poultry firm, the water having liquified and oozed out after the turkeys had warmed up.

"Needling" not only constitutes unfair competition for the law-abiding poultry firm but also fills the ultimate purchaser with disgust, possibly causing him to shift to some other kind of meat. Therefore, it can be seen why stopping such adulteration is advantageous to the farmer with poultry to sell, since the price he receives is dependent to some extent on confidence of the buying public.

—The Farmers Guide, November 30, 1940.

Fall Chicks

Nowadays chicks are started every month of the year. Strictly speaking, we have passed the "fall chick" period and are about to start the "early chick" season. By "early chicks" we mean January and February chicks. It depends somewhat on where you live.

But the fact remains that many poultrymen are still hesitating about putting in a brood of fall or early winter chicks, because they have never done it before. It is true that you can have some trouble with fall chicks, like colds or coccidiosis, but, generally, the troubles are less than in spring.

Every year, from August to November, there is a shortage of large fancy eggs. Egg consumption suffers because in many small towns, particularly, there are no eggs for sale or else pullet eggs are sold as "eggs" at prices that soon discourage the consumer. They wouldn't mind paying 40 or 45 cents for 2-ounce eggs, but when they are charged 30 to 40 cents for pullets and peewees, it is only natural that they balk.

There is a demand for thousands upon thousands of cases of eggs in the fall that is literally "knocked in the head" because we, as producers, cannot supply the demand. The best, easiest and cheapest way to supply this demand is with out-of-season chicks, either a fall brood or a January or February brood. There is not much danger of overdoing the thing and of having too many fancy eggs from July to December.

We have advocated fall chicks for at least six years and it is taking hold as good, sound poultry management—keeping the houses full and other equipment going year around. But it is still too slow and we producers are losing too many $12-a-case checks to satisfy us.

—Poultry Item, December, 1940.

An Untruth About Eggs

Consumers' Research is the name of a private organization purportedly designed to acquaint consumers with the truth, the whole truth and nothing but the truth about consumer goods. The services of this organization are supposed to guide consumers in their spending so that they will spend wisely.

Yet, in a recent Consumers' Research bulletin it is stated that "Consumers who can do so will usually prefer to buy eggs from a general farm with a relatively small flock, and so avoid the product of specialized egg farms that go in for mass production methods."

Mass production means specialized production. And the specialist strives to produce the kind of eggs the consumer will pay most for. Eggs are graded for size, cleanness, soundness of shell and uniformity of pack, according to the consuming public's own specifications. Eggs are graded for interior quality in the same way, to insure the consumer who buys a certain grade of eggs that she gets exactly what she buys.

Consumers' Research needs to do a little more research. If this is a sample of the accuracy of the information it dispenses, a lot of people who are paying out good money for it certainly are getting stung.

—Nulaid News, Oct., 1940.

Northeast Poultry Industry Grows

Of the total hens in the Northeast, 62 per cent are in farm flocks containing less than 400 birds; while in the United States as whole, 85 per cent are in farm flocks. This means that the Northeast is a great commercial poultry section. Fifteen to twenty per cent of the total income of Northeastern farmers comes from poultry. About 50 per cent of Northeastern farmers' income is from dairying, making a total of from 65 to 70 per cent of our total farm income from the dairy and poultry businesses.

In recent years, there has been a rapid movement in the commercial poultry business from the Far West and Central West to the Northeastern states. The reasons for this change are nearby markets, the best in the world, and a climate that is particularly well adapted to the poultry business. Possibly a further reason for rapidly increased poultry industry in the Northeast is the determination of producers to learn how to care for the birds on scientific and economic principles.

—E. R. Eastman, American Agriculturalist, October 12, 1940.

Collects Egg Case Labels

One New England poultryman has developed a unique, but very inexpensive, hobby. He collects egg case labels. An Idaho label which reached his Maine plant about a year ago first attracted his attention. It became the start of a collection that has grown to half a hundred. Some of them are of artistic interest and merit, some of geographic interest, and some are just labels.

The incoming supply of egg cases is carefully scanned for possible additions. When a new label is found the case is set aside until the label can be removed – which sometimes entails a rather lengthy soaking process. Each label is mounted on a plain cardboard flat, such is a part of every poultryman's equipment. Sometimes the labels are destined to make a frieze for the grain room, but until that time they are just a collection.

—Mrs. W. F. Schoppe, Everybodys Poultry Magazine, December, 1940.

POULTRY STATISTICS

Hens on Farms—Rate of Lay

Number of Hens Per Flock and of Eggs Laid Per Hen and Per Flock, First Day of Month

Geographic Division	Layers per flock			Eggs per 100 layers			Egg per flock		
	Jan. 1	Oct. 1	Nov. 1	Oct. 1	Nov. 1	Aggregate Jan.-Nov.	Oct. 1	Nov. 1	Aggregate Jan.-Nov.
North Atl.									
1929-38 (Av.)	96.9	80.4	87.6	28.5	20.5	451	22.8	17.8	382
1939	98.4	78.6	88.5	33.3	27.2	491	26.1	24.0	410
1940	97.2	79.2	86.8	33.8	26.2	488	26.6	22.5	406
E. N. Cent.									
1929-38 (Av.)	108.8	83.8	93.1	26.3	18.1	413	22.2	16.8	385
1939	107.3	85.3	98.0	28.2	22.7	449	24.2	22.3	414
1940	110.8	85.8	99.0	30.9	24.3	445	26.6	24.2	421
W. N. Cent									
1929-38 (Av.)	118.8	90.8	98.8	24.4	15.3	377	22.0	15.1	382
1939	113.1	87.3	98.7	25.3	17.9	417	22.1	17.7	407
1940	118.6	88.2	96.9	28.0	21.4	414	24.7	20.8	423
South Atl.									
1929-38 (Av.)	58.9	49.8	52.6	25.0	20.5	395	12.4	10.8	201
1939	59.9	50.3	54.8	28.8	24.8	433	14.5	13.7	219
1940	59.9	50.4	53.4	29.0	24.8	425	14.5	13.4	222
South Cent.									
1929-38 (Av.)	65.0	54.7	57.4	24.0	20.1	378	13.2	11.6	210
1939	63.6	56.4	59.3	24.1	21.6	406	13.7	13.0	228
1940	65.8	53.3	56.8	27.4	23.7	396	14.6	13.6	220
Western									
1929-38 (Av.)	73.2	61.4	66.8	30.8	22.7	454	18.9	14.8	294
1939	72.6	62.2	67.5	32.2	26.5	472	19.8	17.0	298
1940	73.7	60.7	64.9	34.0	27.9	477	20.2	17.1	301
United States									
1929-38 (Av.)	84.5	67.9	73.3	25.8	18.5	401	17.4	13.7	289
1939	82.8	68.0	75.1	27.5	22.0	436	18.5	16.6	309
1940	85.1	67.2	73.6	29.8	23.9	432	19.8	17.6	312

October egg production was the largest on record for the month, being estimated at 2,215 million eggs, compared with the next largest production of 2,052 million for October of last year—an increase of about 8 per cent. The October output exceeded the 10-year (1929-38) average by about 18 per cent. This increased egg production was entirely due to the increased rate of lay, the average number of layers having been the same as last year. The seasonal decline from September to October was about 11 per cent compared with the average of about 19 per cent.

The aggregate total production of eggs for the 10 months, January to October, inclusive, was 34,843 million, an increase of about 2 per cent over the production for the same months in 1939, and about 5 per cent over the 10-year average. The gain in October egg production over last year was 14 per cent in the West North Central, 10 per cent in the East North Central, 7 per cent in the West, 6 per cent in the South Central and 2 per cent in the North Atlantic and South Atlantic areas.

The average rate of production per layer during October was the largest on record for the month. It was 7.94 eggs compared with 7.36 eggs in October of last year and the 10-year (1929-38) average of 6.70 eggs. It exceeded the previous record high of October 1937 by 4 per cent.

The aggregate average rate of production per layer for the 10 months, January to October, inclusive, was 121.8 eggs compared with 122.5 eggs for the same months in 1939 and the record high of 125.1 eggs in 1938. It exceeded the 10-year average rate by 5 per cent.

The October rate was above that of last year in all parts of the country except in the North Atlantic area where it was about the same. The gain over October 1939 was 13 per cent in the West North Central, 12 per cent in the South Central, 8 per cent in the East North Central, 6 per cent in the West and 1 per cent in the South Atlantic area.

Farm flocks during October carried an average of 279,074,000 layers, which is about the same as in October last year and the 10-year (1929-38) average. The seasonal increase in the number of layers from the low point in August to October was about 13 per cent compared with 15 per cent last year and the 10-year average of 12 per cent. Increases of 3 per cent in the North Atlantic, 2 per cent in the East North Central, and 1 per cent in the West North Central, South Atlantic and Western areas were offset by a 5 per cent decrease in the South Central area.

Although the average number of layers in October was the same as last year, the number of potential layers on November 1 was 7 per cent less indicating that the number of layers in November and December will be less than in 1939. By January 1 the number of layers will probably be about 5 per cent less than on January 1, 1940.

—U. S. D. A. Poultry and Egg Production Report.

Receipts of Eggs and Poultry

Receipts of eggs at the four principal eastern markets in October were 18 per cent larger than a year earlier, and were the heaviest for that month since 1932. November receipts still continue heavier than a year ago, but the increase is not as large as in October. Details are not yet available with respect to the regional sources of eggs that reached terminal markets in November, but it may be assumed that severe weather conditions in parts of the Midwest caused some slowing down of movement from those areas.

This would have an affect upon market prices somewhat in proportion to the extent to which local markets depended upon those areas for supplies. On the other hand, any increase in the receipts of nearby eggs at an eastern market like New York would tend to offset the full influence of reduced supplies from the West.

Some slight increase in eastern production is occurring, according to trade reports. Reports covering receipts at eastern egg auctions and producers assembling plants show weekly increases in November. Receipts at Midwestern packing plants have continued to show weekly decreases in November, and, until the week ending November 23, increases also over corresponding periods of last year.

—Comment from U. S. D. A. Monthly Egg and Poultry Market Review.

Receipts of Eggs (cases) at 4 Markets*

Geographic Section	October 1940	October 1939	% change	Jan. to Oct., Inc. 1940	Jan. to Oct., Inc. 1939	% change
New England	30,141	32,894	− 8.4	380,935	317,336	+ 20.0
Middle Atlantic	105,422	105,234	+ 0.2	1,800,566	1,702,374	+ 5.8
South Atlantic	7,539	11,575	− 34.9	231,678	247,353	− 6.3
East North Central	139,260	91,896	+ 51.5	2,698,666	2,464,336	+ 9.5
West North Central	287,073	199,289	+ 44.0	7,033,450	7,031,846	+ 0.02
South Central	598	218	+174.3	75,431	55,375	+ 36.2
Mountain	18,313	16,764	+ 9.2	320,788	243,331	+ 31.8
Pacific	63,690	96,179	− 33.8	409,286	368,864	+ 11.0
Miscellaneous	291	305	− 4.6	4,476	4,500	− 0.5
TOTAL	652,327	554,354	+ 17.7	12,955,276	12,435,315	+ 4.2

Receipts of Dressed Poultry (pounds) at 4 Markets*

Geographic Section	October 1940	October 1939	% change	Jan. to Oct., Inc. 1940	Jan. to Oct., Inc. 1939	% change
New England	1,843,086	1,394,860	+ 32.1	13,168,777	11,584,396	+ 13.7
Middle Atlantic	4,120,301	2,311,631	+ 78.2	43,509,529	35,545,562	+ 22.4
South Atlantic	2,918,445	1,449,942	+101.3	22,861,437	14,951,378	+ 52.9
East North Central	4,650,417	4,153,569	+ 12.0	31,310,405	31,931,633	− 1.9
West North Central	27,924,490	25,755,579	+ 8.4	141,608,890	121,521,849	+ 16.5
South Central	977,511	757,257	+ 29.1	14,228,397	14,952,739	− 4.8
Mountain	236,584	153,969	+ 53.7	3,836,253	3,101,301	+ 23.7
Pacific	423,111	517,945	− 18.3	11,008,343	6,524,903	+ 68.7
Miscellaneous	−	24,000	−	128,680	58,117	+121.4
TOTAL	43,093,945	36,518,752	+ 18.0	281,660,711	240,171,878	+ 17.3

* New York, Chicago, Philadelphia, and Boston.

Receipts of Eggs and Poultry at Central Western Primary Markets

Week Ending	Cases of Eggs			Pounds of Poultry (000 omitted)			Pounds of Young Stock (000 omitted)			Pounds of Fowl (000 omitted)		
	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.	1940	1939	% Chg.
Nov. 2	24,372	14,094	+72.92	5,733	6,912	−17.05	3,410	4,235	−19.47	2,249	2,600	−13.49
Nov. 9	17,578	12,881	+36.46	6,501	7,631	−14.81	4,145	4,622	−10.33	2,248	2,912	−22.80
Nov. 16	15,177	14,050	+ 8.02	5,630	7,485	−24.78	3,439	4,538	−24.21	2,132	2,851	−25.20
Nov. 23	14,701	18,039	−18.50	8,632	7,411	+16.46	5,022	4,375	+14.79	3,508	2,933	+19.59
Nov. 30	12,407	20,455	−39.34	6,917	5,449	+26.92	3,518	2,975	+18.25	3,303	2,383	+38.56

—Compiled from U. S. D. A. Market Reports.

Receipts of Eggs at Eastern Egg Auctions

Week Ending	No. of Plants	Cases Received During Week	% Change from Previous Week	% Change from Last Year
November 2	29	27,124	− 3.75	+ .83
November 9	30	28,914	+ 3.90	+ 3.69
November 16	31	30,904	+10.81	+ 7.96
November 23	28	31,174	+ 4.74	+11.47
November 30	27	32,882	+ 8.12	+ 9.91

Receipts of Eggs at Pacific Coast Primary Markets

Week Ending	No. of Plants	1940	1939	% Change from Previous Week	% Change from Last Year
November 2	60	48,673	53,776	−1.34	− 9.49
November 9	59	47,568	53,823	−1.84	−11.62
November 16	60	45,842	55,108	−4.29	−16.81
November 23	59	45,288	55,258	− .91	−18.04
November 30	60	45,962	57,460	+1.09	−20.01

—Compiled from U. S. D. A. Market Reports.

Egg-Feed Ratios

New York Egg-Feed Ratio

Week Ending	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration			Avg. Egg Price per Doz. (Dollars)			Avg. Feed Cost per 100 lbs. (Dollars)		
	1940	1939	1938	1940	1939	1938	1940	1939	1938
November 1	6.0	6.3	4.3	.32	.286	.357	1.92	1.835	1.52
November 8	6.0	6.4	4.5	.324	.293	.34	1.93	1.88	1.52
November 15	6.6	6.4	4.6	.298	.299	.336	1.97	1.91	1.54
November 22	6.7	9.0	4.8	.297	.218	.34	1.98	1.96	1.63

—Compiled by N. Y. State Dept. of Agriculture and Markets.

Chicago Egg-Feed Ratio

Week Ending	Dozens of Eggs to Buy 100 lbs. of Laying Ration			Price of Fresh Graded Firsts (Dollars)		Cost of Ration per 100 lbs. (Dollars)	
	1940	1939	10-yr. Avg. 1929-38	1940	1939	1940	1939
November 2	5.61	4.73	4.28	.214	.235	1.202	1.111
November 9	5.90	4.66	4.01	.210	.240	1.239	1.118
November 16	5.76	4.62	3.92	.222	.245	1.280	1.131
November 23	5.34	4.73	3.99	.239	.242	1.276	1.145
November 30	4.53	5.68	4.01	.281	.206	1.277	1.175

—Compiled from U. S. D. A. Market Reports.

Central California Egg-Feed Ratio

	Dozens of Eggs Required to Buy 100 lbs. of Laying Ration					
	1940	1939	1938	1937	1936	1935
October	5.26	6.01	4.43	5.51	5.87	4.77
January-October	8.36	7.18	6.95	8.80	7.24	6.67
Year		7.17	6.50	8.27	7.07	6.41

—Data Compiled by Edwin C. Voorhies, University of California.

Egg Prices

November egg prices followed rather irregular trends, the Agricultural Marketing Service reports. Average quality eggs advanced while top qualities declined slightly. Both advances and declines were reported in certain markets, due in part to location and to the types of eggs distributed locally. Unfavorable weather conditions in the Midwest during part of the month appear to have had a temporary influence on current production as well as on supplies reaching distributing markets.

The most marked changes in egg prices during November have taken place at Chicago. Fresh Firsts in that market advanced 9½ cents, from an opening November price of 20 cents to 29½ cents November 30, with most other grades up 5 to 6 cents. On the futures board at Chicago, November Refrigerator Standards, which closed at 18.45 cents on November 1, were 20.80 cents November 29. Mixed Color Firsts at New York advanced 3½ cents during the month, but Nearby and Pacific Coast Specials showed net declines of 1½ cents. The foregoing are typical of the reverse trends that have characterized markets recently. In a general way, average quality eggs have advanced, while top qualities are slightly lower. But this still leaves a spread of 7 to 10 cents between average and top quality eggs in New York, while at Washington and Baltimore, the differences between graded U. S. Extras and ordinary ungraded current receipts average up to 15 cents. On the Pacific Coast, top grade prices advanced toward the middle of November, but later lost these gains, and at the close are about the same as at the beginning of the month. U. S. Extras at San Francisco are 34 cents and U. S. Standards 28 cents.

Prices generally are higher than a year ago, but here again the extent of the difference depends upon market and grade. At Chicago, Firsts are 9 cents higher now than at the close of November last year. At New York, Mixed Color Firsts are 5 cents higher, Nearby Specials 2 cents higher, and Pacific Coast Specials 9 to 10 cents higher. These are all last-of-the month comparisons, and not comparisons of averages for the month as a whole. The latter differences would not be so great.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Mid-Month Farm Prices of Eggs Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	24.2	20.3	17.3	16.8	16.8	16.8	18.1	19.9	23.2	26.2	30.1	28.8
1939	18.8	16.7	16.0	15.5	15.2	14.9	16.5	17.5	20.6	22.9	25.8	20.5
1940	18.3	20.2	15.4	15.0	15.1	14.4	16.4	17.2	21.0	23.7		

1940 Egg Prices at New York City

Kind	Nov. 1	Nov. 8	Nov. 15	Nov. 22	Nov. 29	Nov. 29, '39
Mixed Color Firsts	24½	24½	23	23	28	23
Nearby and Midwestern White Premium Marks	38-40½	35-37½	34½-37	34-36½	35½-38	27-29½
Nearby and Midwestern White Specials	37½	34½	33½-34	33½	35	26½
Pacific Coast Specials	39-40¾	36½-38½	36½-38½	36½-39½	38-38¾	27½-30½
Nearby and Midwestern Brown Exchange Specials	34	33½	33	33	35	27

Eggs in Storage

Frozen egg stocks on November 1 were reported to be 111,743,000 pounds, compared with 104 million pounds a year earlier, and a 5-year average of 100½ million pounds. The out-of-storage movement of this product in the 35 cities during November has been 40 per cent heavier than last year, so that the surplus over a year ago has been materially reduced under what it was on the first of the month.

Storage supplies of eggs on November 1 consisted of 4,150,000 cases, an increase of 630,000 cases over a year earlier, but only about 80,000 more than the 1935-39 average for that date. The storage reduction since November 1 in the 35 cities slightly exceeds that of a year ago in terms of volume, but on account of the heavier stocks this year, the relationship with last year shows a trifle larger surplus than at the beginning of the month. Making allowance for eggs in storage that belong to the Surplus Marketing Administration and state relief agencies, current commercially owned stocks are now slightly less than a year ago.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Storage Holdings of Eggs

Kind	Nov. 1 5-Year Avg. 1935-39	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940	% Change Nov. '39-Nov. '40
		(Thousands)			
Shell Eggs (cases)	4,071	3,519	6,040	4,150**	+17.9
Frozen Eggs (lbs.)	100,488	104,282	130,787	111,743	+ 7.1
Frozen Case Equivalent (cases)*	2,871	2,979	3,737	3,193	+ 7.1
Total (cases)	6,942	6,498	9,777	7,343	+13.0

* Frozen eggs are converted on the basis of 35 pounds to the case.

** Includes 683,052 cases owned by the Surplus Marketing Administration for relief distribution.

Poultry Meat Prices

Mid-Month Farm Prices of Chickens Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Avg. 1929-38	14.8	15.0	15.3	15.9	15.7	15.5	15.1	14.9	15.2	14.6	14.1	13.6
1939	14.0	14.2	14.3	14.4	13.9	13.4	13.7	13.0	13.6	12.7	12.4	11.7
1940	12.0	12.2	12.8	12.9	13.6	13.3	13.6	13.4	13.7	13.3		

The live poultry market showed some firmness just prior to the first Thanksgiving holiday and slight price advances were reported. Except for the usual holiday trade, the market was without any special features. In the eastern markets, prices at the close of the month show gains of 1 to 2 cents. The Chicago market was slightly lower at the close than earlier in the month.

Receipts of live poultry at Central Western country packing plants were irregular during November, due largely to storm conditions. There was a heavy increase in total poultry during the week ending November 9 over the preceding week, although the breakdown which shows young stock and fowl separately reveals that this increase was limited to the former, as fowl receipts were lighter. During the week of November 16. receipts were sharply reduced, due to the bad weather, but the following week this carryover reached packing plants and unusual increases occurred. Some part of this may have been due to more aggressive buying. A better picture of what occurred during the month is afforded by combining the several weeks, which shows that total receipts were about 10 per cent lighter than the corresponding period of last year, and that there was a seasonal increase just before Thanksgiving.

The severe storm that swept over Rocky Mountain and Middle Western areas November 10 to 12 did considerable damage to the turkey crop. Although the extent of the damage is not definitely known, it was reported that losses might approximate as much as 4 per cent of the total crop. Heaviest damage was in Minnesota, Nebraska and Iowa, with less serious losses in North Dakota, South Dakota and Kansas. Many large flocks were caught in the open without adequate protection, resulting in thousands of turkeys being frozen to death. The previously announced turkey buying program of the Surplus Marketing Administration was not carried out. and all bids that had been submitted were rejected. It was announced later that no purchases were contemplated until the two Thanksgiving dates, November 21 and 28, established more clearly the trend of prices for later markets. The contemplated purchases were to have been distributed to State relief agencies for use in school lunches.

—Comment from U. S. D. A. Monthly Egg and Poultry Markets Review.

Poultry in Storage

Storage Holdings of Poultry

Kind	Nov. 1 5-Year Avg. 1935-39	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940	% Change Nov. '39-Nov. '40
	(Thousand Pounds)				
Broilers	13,074	10,000	8,425	9,920	– .8
Fryers	8,507	7,257	6,215	10,745	+47.9
Roasters	13,674	13,046	6,918	16,672	+27.7
Fowls	14,573	15,836	21,990	29,147	+84.0
Turkeys	4,977	8,026	15,234	11,716	+45.9
Ducks	7,708	9,203	11,649	10,759	+16.9
Miscellaneous	15,742	15,860	13,481	15,933	+ .4
Unclassified			6,930	9,733	
Total	78,255	79,228	90,842	114,625	+44.6

Hatchery Operations

Eggs Set, Chicks Hacthed, and Chicks Booked by Commercial Hatcheries

Geographic Section	No. of Plants	Eggs Set During October			Salable Chicks Hatched During October			Chicks booked Nov. 1 for Nov. or later delivery			
		1939	1940	% Chg.	1939	1940	% Chg.	No. of Plants	1939	1940	% Chg.
		Thousands			Thousands				Thousands		
N. Eng.	21	1,073	1,644	+53	737	979	+33	10	2,132	1,974	– 7
Mid. Atl.	11	372	247	–34	286	181	–37	7	164	299	+82
S. Atl.	31	1,010	1,196	+18	646	722	+12	15	1,210	1,254	+ 4
E. N. Cent.	32	1,106	1,046	– 5	731	593	–19	24	482	885	+84
W. N. Cent.	9	560	285	–49	359	232	–35	6	58	54	– 7
S. Cent.	15	368	334	– 9	204	205	—	7	55	61	+11
West.	24	645	525	–18	437	344	–21	14	728	820	+13
U. S.	143	5,134	5,278	+ 3	3,400	3,256	– 4	83	4,829	5,347	+11

Production of hatchery chicks during October this year is reported by the Agricultural Marketing Service to be slightly less than the October output of last year. Reports from 143 plants having a combined capacity of 26 million eggs, showed a production of 3,256,000 chicks during October compared with 3,400,000 a year earlier—a decrease of 4 per cent. Hatcheries reporting for the first ten months of 1940 showed a combined output of

99,661,000 chicks compared with 111,947,000 during the same period last year—a decrease of 11 per cent.

Increases in October hatchings of 33 per cent and 12 per cent were reported in the New England and South Atlantic States. These two sections produce about 44 per cent of all the chicks hatched at this time of the year. The increases in these States, however, were more than offset by decreases in other areas ranging from 19 per cent in the East North Central States to 37 per cent in the Middle Atlantic States.

With lighter receipts expected, the demand for hatchery chicks for fall and winter broiler production will be as large as last fall and winter, and it may be even larger. Hatcheries reporting chicks booked on November 1 for later delivery show an increase of 11 per cent compared with the same date last year.

October hatchings for the entire country were 91 per cent heavy breeds and 9 per cent light breeds. In 1939 they were 86 per cent heavy breeds and 14 per cent light breeds. The increase in the proportion of heavy breeds hatched suggests that a larger production of total October hatchings this year were used for broiler production. Because of a heavy current production of shell eggs and a feed-egg ratio that has been only slightly more favorable than a year ago, and decidedly unfavorable compared with the 10-year average, there seems to have been little encouragement to hatch fall chicks for egg producing purposes.

—Comment from U. S. D. A. Poultry and Egg Production Report.

Egg and Poultry Exports and Imports

Exports of Eggs and Poultry

Commodity		October 1940	October 1939	Jan.-Oct., Inc. 1940	Jan.-Oct., Inc. 1939
Eggs in shell	(doz.)	309,808	258,286	3,903,056	2,145,666
Eggs and Yolks, frozen, dried or canned	(lbs.)	9,549	Not available	136,738	Not available
Live Poultry	(lbs.)	9,113	10,182	96,149	154,968
Dressed Poultry	(lbs.)	129,540	200,647	1,216,525	2,145,908

Imports of Eggs and Poultry

Commodity		October 1940	October 1939	Jan.-Oct., Inc. 1940	Jan.-Oct., Inc. 1939
Eggs in shell	(doz.)	28,100	43,274	188,654	267,326
Whole Eggs, dried	(lbs.)	0	0	40,950	40,500
Whole Eggs, frozen	(lbs.)	0	0	167	420
Yolks, dried	(lbs.)	302,308	78,900	2,030,073	526,075
Yolks, frozen	(lbs.)	0	0	420	25,330
Egg Albumen, dried	(lbs.)	47,800	28,296	297,600	415,579
Egg Albumen, frozen	(lbs.)	0	0	0	0
Live Poultry	(lbs.)	184,330	62,222	1,223,650	621,409
Dressed Poultry	(lbs.)	36,584	16,323	345,547	157,900
Poultry, prepaid	(lbs.)	23,417	20,982	254,142	650,251

RESULTS OF LAYING TESTS

J. J. Warren's Rhode Island Reds soared to unprecedented heights during October by winning highest pen honors at eight of the 18 standard tests and blue ribbon awards for top-notch individual performance at five different tests.

Warren's team at Florida scored 380 eggs and 375.05 points, to take number one position to date. A second Warren outfit at Florida edged into second place with 366.85 points. In third highest position, among all breeds, were J. A. Hanson's White Leghorns at Pennsylvania.

Highest scoring hens in each of the five leading breeds were J. J. Warren's R. I. Red at Maine, with 31 eggs and 33.7 points, top bird among all 15,730 individuals in standard tests; W. A. Seidel's White Leghorn at Texas; McDonald Hatchery's White Rock at Texas; Joachim Breeding Farm's New Hampshire at Storrs; and David T. Cohen's Barred Rock at Arizona.

Storrs Test had the highest average production for the month with 19.37 eggs and 18.15 points per bird during the 31 days. Georgia, Florida, Arizona, and Pennsylvania followed in order.

New trials to join the ranks of standard egg laying tests this year are the R. O. P. Progeny Test at Paterson, N. J., and the California Test at Modesto.

Mapleside Poultry Farm walked off with highest pen honors for the 1939-40 test year at the Illinois Test which closed Oct. 21. Walter Swanson took first place with his White Leghorn hen which earned 316.5 points.

Twenty Highest Pens in All Breeds to November 1

Owner	Breed	Eggs	Points	Test
J. J. Warren	Rhode Island Red	380	375.05	Florida
J. J. Warren	Rhode Island Red	371	366.85	Florida
J. A. Hanson	White Leghorn	364	359.25	Pennsylvania
J. J. Warren	Rhode Island Red	372	359.10	Georgia
J. A. Hanson	White Leghorn	366	357.15	Storrs
Roberts Poultry Farm	Rhode Island Red	347	356.05	Storrs
Geo. M. Heberer	White Leghorn	358	352.65	Florida
J. J. Warren	Rhode Island Red	353	345.45	Storrs
Crescent Farms	White Leghorn	354	344.70	Florida
J. J. Warren	Rhode Island Red	360	344.45	Storrs
H. J. Hardin	Rhode Island Red	353	341.55	Georgia
W. H. Wilson	Rhode Island Red	372	340.95	Georgia
Harco Orchards & Plty. Fm.	Rhode Island Red	343	340.80	Storrs
J. J. Warren	Rhode Island Red	332	339.10	Long Island
J. J. Warren	Rhode Island Red	342	338.05	Oklahoma
L. D. Bartholomew	Rhode Island Red	336	337.75	Storrs
Geo. M. Heberer	White Leghorn	352	335.00	Texas
Rapp's Poultry Farm	White Leghorn	344	334.65	Hunterdon, N. J.
J. A. Hanson	White Leghorn	352	334.10	Storrs
J. A. Hanson	White Leghorn	349	333.90	Rhode Island

High Pen in Each Standard Test to November 1—(31 Days)

Owner	Breed	Eggs	Points	Test
J. J. Warren	Rhode Island Red	380	375.05	Florida
J. A. Hanson	White Leghorn	364	359.25	Pennsylvania
J. J. Warren	Rhode Island Red	372	359.10	Georgia
J. A. Hanson	White Leghorn	366	357.15	Storrs
J. J. Warren	Rhode Island Red	332	339.10	Long Island
J. J. Warren	Rhode Island Red	342	338.05	Oklahoma
Geo. M. Heberer	White Leghorn	352	335.00	Texas
Rapp's Poultry Farm	White Leghorn	344	334.65	Hunterdon, N. J.
J. A. Hanson	White Leghorn	349	333.90	Rhode Island
Fox Poultry Farm	Rhode Island Red	316	331.65	Passaic, N. J.
J. J. Warren	Rhode Island Red	337	331.60	Maine
J. J. Warren	Rhode Island Red	330	329.70	Michigan
Missouri Valley Hatchery	Rhode Island Red	306	324.85	Missouri
J. J. Warren	Rhode Island Red	334	323.65	Paterson, N. J.
J. J. Warren	Rhode Island Red	319	316.50	Western New York
E. B. Parmenter	Rhode Island Red	310	311.65	California
Creighton Brothers	White Leghorn	309	293.90	Central New York
George M. Heberer	White Leghorn	295	291.70	Arizona

High Pen in Each Breed to November 1—(31 Days)

Owner	Breed	Eggs	Points	Test
J. J. Warren	Single Comb Rhode Island Red	380	375.05	Florida
J. A. Hanson	White Leghorn	364	359.25	Pennsylvania
T. N. Wilcox	Barred Rock	338	332.00	Georgia
Thomas J. Harrold	New Hampshire	346	323.90	Georgia
Carter-Dunham Breeding Hatchery	White Rock	312	291.90	Georgia
R. S. Johnson	White Wyandotte	265	258.10	Missouri
Raymond S. Thomas	Ancona	237	216.70	Pennsylvania
Laclede Hatchery	Black Australorp	224	213.75	Missouri
S. E. Raymond	Lamona	206	201.05	Storrs
Lindstrom Poultry Farm	Buff Minorca	201	168.75	Texas
Illinois Hatchery	Brown Leghorn	153	134.95	Texas
Raymond Murphy	White Giant	130	129.15	Missouri
E. J. Covey	Black Minorca	93	87.70	Texas
Laclede Hatchery	Buff Orpington	86	72.30	Florida
Iowa Master Breeders	R. C. Rhode Island Red	68	60.25	Texas
Ward's Poultry Farm	Buff Leghorn	54	44.10	Oklahoma
Superior Hatchery	Light Brahma	40	33.20	Texas
Colonial Poultry Farms	White Minorca	24	23.60	Missouri

High Hen in Each Breed to November 1—(31 Days)

Owner	Breed	Eggs	Points	Test
J. J. Warren	Rhode Island Red	31	33.70	Maine
W. A. Seidel	White Leghorn	31	33.55	Texas
McDonald Hatchery	White Rock	31	32.80	Texas
Joachim Breeding Farm	New Hampshire	30	32.20	Storrs
David T. Cohen	Barred Rock	29	31.20	Arizona
Laclede Hatchery	Black Australorp	27	28.45	Missouri
R. S. Johnson	White Wyandotte	27	26.65	Missouri
Raymond Murphy	White Giant	26	25.95	Missouri
S. E. Raymond	Lamona	26	24.10	Storrs
Raymond S. Thomas	Ancona	24	23.80	Pennsylvania
Illinois Hatchery	Brown Leghorn	27	21.10	Texas
E. J. Covey	Black Minorca	22	20.60	Texas
Superior Hatchery	Light Brahmas	23	19.45	Texas
Lindstrom Poultry Farm	Buff Minorca	21	18.30	Texas
Howard C. Jones	Buff Orpington	19	18.20	Florida
Iowa Master Breeders	R. C. Rhode Island Red	19	17.40	Texas
Colonial Poultry Farms	White Minorca	12	12.45	Missouri
Ward's Poultry Farm	Buff Leghorn	11	9.35	Oklahoma

High Hen in Each Standard Test to November 1—(31 Days)

Owner	Breed	Eggs	Points	Test
J. J. Warren	Rhode Island Red	31	33.70	Maine
W. A. Seidel	White Leghorn	31	33.55	Texas
E. B. Parmenter	Rhode Island Red	31	33.20	Pennsylvania
Geo. M. Heberer	White Leghorn	30	32.90	Florida
Clifton C. Hersey	Rhode Island Red	26	32.75	Storrs
J. A. Hanson	White Leghorn	31	32.55	Rhode Island
Missouri Valley Hatchery	Rhode Island Red	29	31.90	Missouri
J. A. Hanson	White Leghorn	30	31.55	California
Rapp's Poultry Farm	White Leghorn	29	31.40	Hunterdon, N. J.
J. J. Warren	Rhode Island Red	29	31.30	Long Island
David T. Cohen	Barred Rock	29	31.20	Arizona
J. J. Warren	Rhode Island Red	31	31.05	Georgia
Foreman Poultry Farm	White Leghorn	30	30.45	Passaic, N. J.
J. J. Warren	Rhode Island Red	29	30.10	Oklahoma
E. B. Parmenter	Rhode Island Red	28	29.20	Paterson, N. J.
Colonial Poultry Farm	New Hampshire	27	29.15	Michigan
J. J. Warren	Rhode Island Red	29	29.10	Western New York
Bodine's Pedigree Leghorns	White Leghorn	31	28.70	Central New York

Twenty Highest White Leghorn Pens in Country to November 1

Owner	Eggs	Points	Test
J. A. Hanson	364	359.25	Pennsylvania
J. A. Hanson	366	357.15	Storrs
Geo. M. Heberer	358	352.65	Florida
Crescent Farms	354	344.70	Florida
Geo. M. Heberer	352	335.00	Texas
Rapp's Poultry Farm	344	334.65	Hunterdon, N. J.
J. A. Hanson	352	334.10	Storrs
J. A. Hanson	349	333.90	Rhode Island
Guy A. Leader	338	330.05	Pennsylvania
Foreman Poultry Farm	344	327.45	Georgia
Kauder's Pedigreed Leghorns	349	325.45	Texas
Kauder's Pedigreed Leghorns	332	324.45	Storrs
Geo. M. Heberer	341	323.60	Texas
Guy A. Leader	328	323.05	Storrs
Pinebreeze Farm	343	323.00	Florida
Kauder's Pedigreed Leghorns	330	316.65	Georgia
Baker Poultry Farm	324	313.85	Pennsylvania
Geo. M. Heberer	314	312.40	Florida
Kauder's Pedigreed Leghorns	335	311.35	Storrs
Booth Farms and Hatchery	331	310.85	Georgia

Twenty Highest Rhode Island Red Pens in Country to November 1

Owner	Eggs	Points	Test
J. J. Warren	380	375.05	Florida
J. J. Warren	371	366.85	Florida
J. J. Warren	372	359.10	Georgia
Roberts Poultry Farm	347	356.05	Storrs
J. J. Warren	353	345.45	Storrs
J. J. Warren	360	344.45	Storrs
H. J. Hardin	353	341.55	Georgia
W. H. Wilson	372	340.95	Georgia
Harco Orchards and Poultry Farm	343	340.80	Storrs
J. J. Warren	332	339.10	Long Island
J. J. Warren	342	338.05	Oklahoma
L. D. Bartholomew	336	337.75	Storrs
Fox Poultry Farm	316	331.65	Passaic, N. J.
J. J. Warren	337	331.60	Maine
George B. Treadwell	339	331.45	Storrs
J. J. Warren	310	331.40	Maine
J. J. Warren	330	329.70	Michigan
J. J. Warren	327	328.90	Texas
E. B. Parmenter	321	328.65	Pennsylvania
W. H. Wilson	350	328.50	Georgia

Twenty Highest New Hampshire Pens in Country to November 1

Owner	Eggs	Points	Test
Thomas J. Harrold	346	323.90	Georgia
George A. Pearce	330	311.95	Hunterdon, N. J.
Pine Mountain Valley Farms	344	306.50	Georgia
Goodwin's Poultry Farm	319	305.55	Storrs
James H. Horne	309	304.60	Storrs
Colonial Poultry Farm	297	302.55	Texas
Thomas J. Harrold	316	301.95	Georgia
A. J. Williams	311	300.60	Florida
Joachim Breeding Farm	283	293.10	Storrs
Joachim Breeding Farm	290	289.75	Long Island
Ned C. Willoughby	309	282.80	Georgia
Williamson's New Hampshire Farm	281	276.45	Florida
Pine Mountain Valley Farms	283	272.65	Georgia
Pine Top Poultry Farm	306	271.80	Storrs
Williamson's New Hampshire Farm	281	270.25	Florida
Hubbard Farms	280	268.00	Storrs
Fuzzydele Farms	259	267.40	Pennsylvania
A. J. Williams	266	266.95	Florida
Ned C. Willoughby	286	264.25	Florida
Nedlar Farm	282	261.90	Maine

Twenty Highest Barred Plymouth Rock Pens in Country to November 1

Owner	Eggs	Points	Test
T. N. Wilcox	338	332.00	Georgia
Fuzzydele Farms	321	311.30	Storrs
P. N. Hibbard	345	311.30	Storrs
Broad Acres	307	311.20	Storrs
T. N. Wilcox	311	304.45	Florida
Booth Farms and Hatchery	299	293.90	Missouri
David T. Cohen	311	291.80	Storrs
Dryden Poultry Breeding Farm	296	283.55	California
Dryden Poultry Breeding Farm	305	282.55	California
David T. Cohen	279	278.70	Arizona
Booth Farms and Hatchery	294	274.70	Florida
Fuzzydele Farms	276	273.15	Central New York
Dryden Poultry Breeding Farm	285	271.90	Storrs
David T. Cohen	277	268.50	Georgia
Dryden Poultry Breeding Farm	277	266.40	Missouri
E. B. Parmenter	266	260.05	Pennsylvania
R. C. Cobb	271	257.00	Storrs
Booth Farms and Hatchery	277	256.55	Georgia
Foster Jameson	255	256.00	Maine
Angus J. Urquhart	262	250.05	Storrs

Twenty Highest White Plymouth Rock Pens in Country to November 1

Owner	Eggs	Points	Test
Carter-Dunham Breeding Hatchery	312	291.90	Georgia
Carter-Dunham Breeding Hatchery	284	277.20	Storrs
John Spangenberg	290	273.20	Pennsylvania
Carter-Dunham Breeding Hatchery	284	271.20	Georgia
C. W. Winkler	280	267.40	Oklahoma
Albert C. Lawton	296	265.65	Storrs
John Spangenberg	273	255.75	Maine
Kalerok Farm	259	253.00	Rhode Island
Airy View Farm	266	247.60	Hunterdon, N. J.
Drumm Egg Farm	257	245.80	Florida
John Spangenberg	257	242.45	Storrs
Riley Poultry Farm	283	240.95	Oklahoma
Drumm Egg Farm	239	237.95	Georgia
Hillview Imperial Breeding Farm	257	236.50	Storrs
Frank L. Douglas	249	230.70	Storrs
Missouri Valley Hatchery	253	229.95	Georgia
Knepley Hatchery	253	229.10	Oklahoma
Donald T. Adams	239	228.10	Maine
Drumm Egg Farm	228	225.95	Georgia
Gene-Garden Poultry Farm	249	225.25	Maine

Average Production in Each Test to November 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for Oct.	Per Cent Mortality to Date
Storrs	1,300	19.37	18.15	22.49	.23	.23
Georgia	1,300	19.73	17.88	22.03	.92	.92
Florida	1,248	18.62	17.34	22.35	.24	.24
Arizona	390	17.40	16.49	22.74	.25	.25
Pennsylvania	1,027	17.41	16.28	22.43	.29	.29
Hunterdon, N. J.	650	16.68	15.69	22.58	.46	.46
Texas	1,300	16.17	15.11	22.42	.00	.00
California	676	15.90	14.56	21.98	1.03	1.03
Oklahoma	650	16.05	14.42	21.56	.76	.76
Long Island	1,131	15.37	14.14	22.06	.26	.26
Passaic, N. J.	1,014	14.63	13.40	21.98	.09	.09
Rhode Island	546	13.43	12.91	23.05	1.46	1.46
Maine	975	13.79	12.77	22.23	.00	.00
Missouri	780	12.95	12.55	23.25	.00	.00
Paterson, N. J.	169	13.43	12.53	20.28	.00	.00
Central New York	910	13.36	11.84	21.26	.32	.32
Michigan	780	11.76	10.45	21.38	.89	.89
Western New York	884	10.49	9.90	22.64	.00	.00
All Tests	15,730	15.75	14.58	22.21	.36	.36

High Hen, Each Breed, for the Year, in Illinois Non-Standard Test

Owner	Breed	Eggs	Points
Walter Swanson	White Leghorn	298	316.50
Mapleside Poultry Farm	Barred Rock	304	306.55
F. S. Tarbill	Rhode Island Red	269	279.25
Belldear Hatchery	White Rock	263	273.55
Berry-Ajax Hatchery	Blue Australorp	259	268.20
Belldear Hatchery	White Wyandotte	233	244.30
John Pfeifer	New Hampshire	205	224.20
Wallace Moody	Buff Rock	182	189.95

High Pen, Each Breed, for the Year in Illinois Non-Standard Test

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	2308	2300.30
E. T. Hirstein	White Leghorn	2200	2279.90
F. S. Tarbill	Rhode Island Red	2024	2085.30
Berry-Ajax Hatchery	Black Australorp	1853	1935.00
Belldear Hatchery	White Wyandotte	1757	1820.95
John Pfeifer	New Hampshire	1490	1624.45
Illinois Hatchery	White Rock	1543	1608.30
Wallace Moody	Buff Rock	1154	1191.35

New Chick-Embryo Vaccine

A new chick-embryo anti-measles vaccine has been developed at the Medical Research School, University of Pennsylvania, and Squibb's institute of Medical Research, according to the Science News Letter for September 28, 1940. Measles virus is passed through chick embryos and is so modified that it produces only a mild type of measles when injected into children. Indications are that vaccinated children resist both experimental injections and exposure to actual measles cases.

Twenty Highest New Hampshire Pens in Country to November 1

Owner	Eggs	Points	Test
Thomas J. Harrold	346	323.90	Georgia
George A. Pearce	330	311.95	Hunterdon, N. J.
Pine Mountain Valley Farms	344	306.50	Georgia
Goodwin's Poultry Farm	319	305.55	Storrs
James H. Horne	309	304.60	Storrs
Colonial Poultry Farm	297	302.55	Texas
Thomas J. Harrold	316	301.95	Georgia
A. J. Williams	311	300.60	Florida
Joachim Breeding Farm	283	293.10	Storrs
Joachim Breeding Farm	290	289.75	Long Island
Ned C. Willoughby	309	282.80	Georgia
Williamson's New Hampshire Farm	281	276.45	Florida
Pine Mountain Valley Farms	283	272.65	Georgia
Pine Top Poultry Farm	306	271.80	Storrs
Williamson's New Hampshire Farm	281	270.25	Florida
Hubbard Farms	280	268.00	Storrs
Fuzzydele Farms	259	267.40	Pennsylvania
A. J. Williams	266	266.95	Florida
Ned C. Willoughby	286	264.25	Florida
Nedlar Farm	282	261.90	Maine

Twenty Highest Barred Plymouth Rock Pens in Country to November 1

Owner	Eggs	Points	Test
T. N. Wilcox	338	332.00	Georgia
Fuzzydele Farms	321	311.30	Storrs
P. N. Hibbard	345	311.30	Storrs
Broad Acres	307	311.20	Storrs
T. N. Wilcox	311	304.45	Florida
Booth Farms and Hatchery	299	293.90	Missouri
David T. Cohen	311	291.80	Storrs
Dryden Poultry Breeding Farm	296	283.55	California
Dryden Poultry Breeding Farm	305	282.55	California
David T. Cohen	279	278.70	Arizona
Booth Farms and Hatchery	294	274.70	Florida
Fuzzydele Farms	276	273.15	Central New York
Dryden Poultry Breeding Farm	285	271.90	Storrs
David T. Cohen	277	268.50	Georgia
Dryden Poultry Breeding Farm	277	266.40	Missouri
E. B. Parmenter	266	260.05	Pennsylvania
R. C. Cobb	271	257.00	Storrs
Booth Farms and Hatchery	277	256.55	Georgia
Foster Jameson	255	256.00	Maine
Angus J. Urquhart	262	250.05	Storrs

Twenty Highest White Plymouth Rock Pens in Country to November 1

Owner	Eggs	Points	Test
Carter-Dunham Breeding Hatchery	312	291.90	Georgia
Carter-Dunham Breeding Hatchery	284	277.20	Storrs
John Spangenberg	290	273.20	Pennsylvania
Carter-Dunham Breeding Hatchery	284	271.20	Georgia
C. W. Winkler	280	267.40	Oklahoma
Albert C. Lawton	296	265.65	Storrs
John Spangenberg	273	255.75	Maine
Kalerok Farm	259	253.00	Rhode Island
Airy View Farm	266	247.60	Hunterdon, N. J.
Drumm Egg Farm	257	245.80	Florida
John Spangenberg	257	242.45	Storrs
Riley Poultry Farm	283	240.95	Oklahoma
Drumm Egg Farm	239	237.95	Georgia
Hillview Imperial Breeding Farm	257	236.50	Storrs
Frank L. Douglas	249	230.70	Storrs
Missouri Valley Hatchery	253	229.95	Georgia
Knepley Hatchery	253	229.10	Oklahoma
Donald T. Adams	239	228.10	Maine
Drumm Egg Farm	228	225.95	Georgia
Gene-Garden Poultry Farm	249	225.25	Maine

Average Production in Each Test to November 1

Test	No. Birds	Eggs Per Bird	Points Per Bird	Egg Wt. in Ounces Per Doz.	Per Cent Mortality for Oct.	Per Cent Mortality to Date
Storrs	1,300	19.37	18.15	22.49	.23	.23
Georgia	1,300	19.73	17.88	22.03	.92	.92
Florida	1,248	18.62	17.34	22.35	.24	.24
Arizona	390	17.40	16.49	22.74	.25	.25
Pennsylvania	1,027	17.41	16.28	22.43	.29	.29
Hunterdon, N. J.	650	16.68	15.69	22.58	.46	.46
Texas	1,300	16.17	15.11	22.42	.00	.00
California	676	15.90	14.56	21.98	1.03	1.03
Oklahoma	650	16.05	14.42	21.56	.76	.76
Long Island	1,131	15.37	14.14	22.06	.26	.26
Passaic, N. J.	1,014	14.63	13.40	21.98	.09	.09
Rhode Island	546	13.43	12.91	23.05	1.46	1.46
Maine	975	13.79	12.77	22.23	.00	.00
Missouri	780	12.95	12.55	23.25	.00	.00
Paterson, N. J.	169	13.43	12.53	20.28	.00	.00
Central New York	910	13.36	11.84	21.26	.32	.32
Michigan	780	11.76	10.45	21.38	.89	.89
Western New York	884	10.49	9.90	22.64	.00	.00
All Tests	15,730	15.75	14.58	22.21	.36	.36

High Hen, Each Breed, for the Year, in Illinois Non-Standard Test

Owner	Breed	Eggs	Points
Walter Swanson	White Leghorn	298	316.50
Mapleside Poultry Farm	Barred Rock	304	306.55
F. S. Tarbill	Rhode Island Red	269	279.25
Belldear Hatchery	White Rock	263	273.55
Berry-Ajax Hatchery	Blue Australorp	259	268.20
Belldear Hatchery	White Wyandotte	233	244.30
John Pfeifer	New Hampshire	205	224.20
Wallace Moody	Buff Rock	182	189.95

High Pen, Each Breed, for the Year in Illinois Non-Standard Test

Owner	Breed	Eggs	Points
Mapleside Poultry Farm	Barred Rock	2308	2300.30
E. T. Hirstein	White Leghorn	2200	2279.90
F. S. Tarbill	Rhode Island Red	2024	2085.30
Berry-Ajax Hatchery	Black Australorp	1853	1935.00
Belldear Hatchery	White Wyandotte	1757	1820.95
John Pfeifer	New Hampshire	1490	1624.45
Illinois Hatchery	White Rock	1543	1608.30
Wallace Moody	Buff Rock	1154	1191.35

New Chick-Embryo Vaccine

A new chick-embryo anti-measles vaccine has been developed at the Medical Research School, University of Pennsylvania, and Squibb's institute of Medical Research, according to the Science News Letter for September 28, 1940. Measles virus is passed through chick embryos and is so modified that it produces only a mild type of measles when injected into children. Indications are that vaccinated children resist both experimental injections and exposure to actual measles cases.

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